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ANALYSIS OF COMMERCIAL CONTRACT TRAINING FOR THE MARINE CORPS (PHASE II)

D. Robert Copeland, et al

Naval Training Equipment Center
Orlando, Florida

June 1975

TAEG

TRAINING ANALYSIS AND EVALUATION GROUP

TAEG REPORT NO. 22-1

ANALYSIS OF COMMERCIAL CONTRACT TRAINING FOR THE MARINE CORPS (PHASE II)

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13 ABSTRACT

This two-part report describes the Phase II findings of a two-phase study to determine if certain Marine Corps skill training requirements could be satisfied through contract with qualified commercial sources. Phase I study findings (applicable to the Marine Corps), presented in TAEG Report No. 13-1, December 1974, address various commercial training programs, management systems, technological advances, instructional techniques, curricula, and financial management practices potentially applicable to the Navy training system.

Whereas the Phase I study effort dealt with a survey and preliminary analysis of the training capability of commercial sources, the effort described in this report demonstrates the utility of the commercial contract training concept. It addresses the major issues concerned with source evaluation, skill analysis and selection, contractual considerations, and comparative training capability evaluation. It provides guidelines for analyses necessary for sound management decisions subsequent to initiation of procurement action of training services from commercial sources. TAEG Report No. 22-2 contains information useful to Area Vocational/Technical Support Center personnel and others involved with implementation and functional management of a VOTEC program. Most importantly, Phase II presents a plan to initiate, develop, implement, manage, and administer commercial contract training programs to support appropriate active and reserve Marine Corps skill training requirements.

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FOREWORD

This is the third of three reports which present the findings of a two-phase study of the feasibility of using commercial sources to train Navy and Marine Corps personnel in selected basic skills. The study was conceived by the Chief of Naval Education and Training (CNET) Executive Staff and assigned to the TAEG by the Chief of Naval Education and Training Support (CNETS) on 14 August 1972. The Marine Corps was included in the Phase II portion of the study in April 1973 at the request of the Commandant of the Marine Corps (CMC).

The first report (TAEG Report 13-1) was concerned with the results of the Phase I analysis of the training capabilities of industrial organizations and public and private training institutions. The Phase I analysis included training techniques, management and administrative practices, training cost considerations, and ASPR applications as related to commercial contract training. The findings and recommendations of the Phase II portion of the study are presented in this report and in TAEG Reports 21-1 and 21-2. This report addresses the application of commercial contract training to Marine Corps training, and TAEG Reports 21-1 and 21-2 address the application to Navy training. Both Phase II reports are based on the Phase I data base and include recommended plans for the implementation, administration, and management of the commercial contract training concept, including procurement and costing considerations and techniques.

This report is made up of two parts. Part I forms the main body of the report and addresses the major findings of the study and recommends alternative plans for, and applications of, the commercial contract training concept. Part II, presented in TAEG Report 22-2, is an "Area VOTEC Support Center Guidelines" package which includes documentation designed to assist personnel charged with the responsibility of implementing, administering, and managing commercial contract training programs. This user's guide includes a sample skill specification and contract schedule, list of vocational/technical (VOTEC) schools, VOTEC evaluation procedures, and contractual considerations.

The study reported here was undertaken by a six man team of multidisciplinary specialists. The team was composed of four education specialists (D. R. Copeland, T. Curry, S. Gates, and J. Henry), an economist Dr. Swope), and an engineer (R. Nutter). All team members had backgrounds relevant to training and training applications.

Commercial contract training, used in appropriate situations, for appropriate skills, can be an effective means of complementing the Marine Corps' present training capability. The concept is applicable to active duty training, reserve training, interservice training, and to mobilization planning. It is well suited to Marine Corps skills which

have counterpart civilian skills, to skills having low volume student input, and to situations where peak training loads occur. Properly implemented and managed, the concept of commercial contract training provides an effective alternative for reducing training costs while simultaneously maintaining the Marine Corps' high standards for quality training. This concept is discussed in the following sections of this report and should be seriously considered by all concerned with improving the effectiveness and efficiency of the Marine Corps' training system.

SUMMARY

INTRODUCTION

Publication of this report completes a comprehensive two-phase study conducted by the TAEG to determine the utility of using qualified commercial sources (industrial organizations, public and private training institutions) to train Navy and Marine Corps personnel in selected skills. The study, assigned to the TAEG in August 1972 by the CNETS, was expanded by the CNET-approved request of the CMC in April 1973 to include Marine Corps skill training.

The Commercial Contract Training Analysis study was conducted in two phases. The Phase I findings are documented in TAEG Report 13-1. The Phase I report demonstrates the feasibility of the commercial contract training concept and documents the training capabilities, techniques, and innovations used in the commercial environment.

Development of procedures for implementation of commercial contract training programs for appropriate Navy and Marine Corps skills was the major Phase II study task. Implementation procedures for Marine Corps programs are presented in this report and procedures for Navy skill programs are presented in TAEG Reports 21-1 and 21-2. These procedures are based on the basic conclusion of this study that public VOTEC institutions will normally be the most cost and training effective commercial training sources for selected Marine Corps skills. Prerequisites for successful implementation of the commercial contract training concept include a Headquarters Marine Corps issued Marine Corps Order for VOTEC training, a general contract training specification, and VOTEC program guidelines. These documents, plus others, are included in Parts I and II of this report for consideration by the CMC.

The TAEG is convinced that commercial sources, particularly VOTEC institutions, have a definite place in the Marine Corps' vast training system. In appropriate situations, and for appropriate skills, these sources may be used to provide cost effective, quality training to Marine Corps active duty and reserve personnel. These sources may also be called upon to support mobilization training requirements. However, as with any new concept, the success of commercial contract training will ultimately be determined by the degree of acceptance and support extended by management and by those assigned responsibility for VOTEC program implementation and administration. The Marine Corps will realize substantial benefit in terms of increased capability and cost effectiveness if this progressive concept is adopted to complement the Marine Corps' training system.

STUDY OBJECTIVES

Two primary study objectives were established by the CNET and the CMC:

Phase I. Identify commercial sources which possess capabilities for providing relevant and effective training in selected specialties in support of the Navy training system.

Phase II. Develop plans, methodology and final recommendations for utilizing commercial sources, under contract, to conduct Navy and Marine Corps training for selected skills.

STUDY PROCEDURES

The procedures employed in this study included review of appropriate literature and personal visits to numerous industrial organizations, public and private educational institutions, and Navy and Marine Corps activities. Questionnaires were developed to support all data collection inquiries thus insuring comparability and uniformity of data. The majority of recommendations and conclusions presented in this report are founded on direct observations of various Marine Corps activities, commercial training techniques, equipment, management procedures, and programs in operation.

STUDY FINDINGS AND RECOMMENDATIONS

A summary of the major Phase II study findings and recommendations is presented below.

FINDINGS.

1. Public VOTEC training institutions are, in terms of total effectiveness and utility to the Marine Corps, the best commercial sources for supplementing active and reserve skill training.

2. The DoD's philosophy and attitude toward training have changed appreciably in recent years. Progressive endeavors, such as the commercial contract training concept now being explored, can favorably impact upon many major issues of common concern to the armed services and should be supported and promoted at the highest levels of DoD management.

3. Issues that must be considered in establishing skill training programs with public VOTEC institutions include:

   a. Marine Corps/civilian community relations

   b. Interservice training objectives

c. Marine Corps student input

d. Armed Service Procurement Regulations (ASPR) and Marine Corps specifications

e. Marine Corps peak training load requirements

f. Accredited training

g. Student environment (Marine Corps versus civilian)

h. Proximity of training institution to Marine Corps installation

i. Cost effectiveness

j. VOTEC institution training capability.

4. Basic skills common to the Marine Corps and to the civilian sector are most suitable for VOTEC institution training. Marine Corps Military Occupational Specialties (MOS) skills which have certain tasks or equipment unique to the Marine Corps, but are otherwise similar to counterpart civilian skills, may also be trained in VOTEC institutions. Skills that require a high percentage of Marine Corps-unique training and equipment are not realistic candidates for VOTEC institution training. Furthermore, MOSs designated for officers and senior NCOs normally require supervisory and/or management training and are not suitable for VOTEC institution training.

5. Public VOTEC institutions offer training programs which require little or no revision to existing curricula for 37 percent of the 67 MOS skills included in this study. VOTEC institutions could provide training for an additional 17 percent of the MOS skills with only minor revisions to existing curricula and for an additional 24 percent if major revisions to existing curricula were made. Approximately 78 percent of the total MOSs analyzed could be trained in public VOTEC institutions; and 22 percent are not suitable for such training.

6. Public VOTEC institutions, private training institutions, and nondefense industrial organizations collectively represent a powerful training resource in the event of mobilization. This capability should appropriately be reflected in mobilization plans.

7. A realistic estimate of the absolute magnitude of cost savings to be realized through adoption of the commercial contract training concept requires the development of training specifications for each skill and the identification of specific training institutions where the training is to be performed. Skill areas where enrollment is relatively low offer the greatest potential for cost savings.

8. Many opportunities to utilize civilian institutions for military training are available. If a management policy is adopted which will emphasize and promote flexibility at the operational level a considerable amount of Marine Corps skill training can be acquired from VOTEC institutions at nominal costs.

9. The appropriate contractual vehicle for most VOTEC programs will be the "Negotiated Indefinite Quantity Contract." The "both" party signature approach (Standard Form 26 and DD Form 1155) to order training services is preferred over the "single" party signature approach (Standard Form 33).

10. An effective centralized management system is essential to a successful Marine Corps-wide VOTEC training program. Centralized management of policy and funding by Headquarters Marine Corps for regular and reserve components is necessary for program control and continuity. A single code could act as program coordinator. Functional management of Area VOTEC Support Centers (AVSCs) would be most effective under the cognizance of Commanding Officers of Marine Corps bases and other major installations having necessary resources.

11. Administrative control of VOTEC programs should flow from Headquarters Marine Corps (management and funding) to designated major commands (implementation management) to the AVSCs (user services) to the level four field commands. A minimum of one civil service education specialist at each AVSC is considered essential to promote program continuity.

12. It is essential that AVSCs be established at major Marine Corps installations where training and contract personnel are available to support VOTEC training programs. These support centers will serve as an advisory, contracting, and monitoring service agency to insure quality contract training and will provide interface with Marine Corps active and reserve units and VOTEC institutions.

13. Implementation of the VOTEC training concept should include tasking agreements with commanders of bases designated as AVSCs. These tasking agreements should include direct and indirect staffing for the AVSCs, facility space with equipment allowances, and authority to use appropriate base staff functions to support the VOTEC program. Three project officers, representing Ground, Air, and Reserve Forces will be required for approximately two months at Headquarters Marine Corps to implement the concept.

14. It is essential that a Marine Corps order for VOTEC training be issued if the VOTEC training concept is to be a viable Marine Corps training resource.

15. Area VOTEC Support Centers will require a minimum core staff consisting of one supervisor (O-4, O-5) on a part-time basis, one VOTEC training officer (O-2, O-3) on a part- or full-time basis, one training support chief (E-8, E-9) or education specialist (GS-9, GS-11) on a part- or full-time basis, and one administrative clerk (E-6) on a full-time basis.

16. Vocational/technical institutions considered for active duty and reserve training should be limited to those institutions within a 25 mile radius of the Marine Corps base facility. The cost effectiveness of the concept decreases and administrative problems increase rapidly as this limit is exceeded.

17. A comprehensive portfolio is required which identifies the training capabilities of all public and private VOTEC institutions and major industrial organizations within the continental United States (CONUS).

18. Public VOTEC institutions suitable for basic Marine Corps skill training are not available outside the 50 states. Training for personnel in the Pacific Theater could possibly be obtained at VOTEC institutions located in Hawaii if provisions for Temporary Additional Duty (TAD) en route to duty station are acceptable.

19. Personnel assigned to Marine Corps installations outside the CONUS often perform in jobs other than their assigned MOS. Such manpower utilization, often dictated by personnel shortages, is an inefficient use of manpower skills and training that has a detrimental effect on assignee's motivation and morale affecting reenlistment. This issue requires future additional study.

RECOMMENDATIONS.

Commercial Contract Training.

1. The Commandant of the Marine Corps should adopt the VOTEC concept for selected basic skill training for both the regular and reserve components of the Marine Corps.

2. The Marine Corps should place emphasis on public institutions as the major source of VOTEC training for selected basic skills.

3. The VOTEC training during peacetime should be limited to low volume pipeline training by individual VOTEC institutions.

4. The CMC should consider public and private VOTEC institutions as a major adjunct for basic skill training in the planning and implementation of mobilization.

5. The Marine Corps VOTEC program should be centrally managed. The management of the VOTEC program should be concerned with policy, planning, programs, and budgeting.

6. The CMC should establish AVSCs at each major training installation of the Marine Corps. The AVSCs should be established as an adjunct to the existing G-3 Sections of major CONUS and Hawaii Marine Corps Training Centers.

7. The AVSCs should be staffed by present on board military officers at the 04 and 05 level. The addition of one civilian education specialist (GS-1710-9/11) and one administrative clerk (E-6) should be considered for the implementation of the VOTEC program.

8. The Marine Corps should maintain and keep current a comprehensive portfolio on capabilities of commercial contract training sources; this VOTEC information should be used for the selection of commercial training sources for peacetime training and mobilization planning. The responsibility for gathering VOTEC information should be assigned to AVSC's for specific geographic areas.

9. The VOTEC training for peacetime active duty and reserve (weekend) training should be limited to institutions within approximately 25 miles radius of Marine Corps bases or Navy and Marine Corps Reserve Centers. Consideration should be given to VOTEC institutions having billeting and messing facilities, regardless of distance from military installations, for mobilization planning and Marine Corps Reserve annual active duty for training.

10. The proposed Marine Corps Order 15___ presented in TAEG Report 22-1 should be issued by Headquarters Marine Corps for VOTEC training.

11. The Marine Corps VOTEC training program should adopt the guidelines established in TAEG Report 22-2.

12. The AVSCs should use the Training Specification for Navy/Marine Corps Vocational/Technical (VOTEC) Skill Training Program as the basic document when supported by the appropriate Program of Instruction for defining the specific VOTEC program to be procured. This specification is included in TAEG Report 22-2.

13. The Marine Corps should establish a policy that VOTEC contract agreements be "Negotiated Indefinite Quantity Contracts" with "both party" signature as defined by the ASPR.

14. The Marine Corps should consider a single site AVSC to serve jointly the Navy and Marine Corps in the San Diego and Hawaii area.

15. The CMC should bring to the attention of the Secretary of the Navy the Marine Corps Reserve VOTEC program.

Marine Corps Education and Training Management.

1. The CMC should establish the Marine Corps Education and Training Command. The training functions of the Deputy Chief of Staff (Air) and the functions of the Director of Education and Training, Headquarters Marine Corps, should be incorporated in the proposed Marine Corps Education and Training Command.

2. The recommended Marine Corps Education and Training Command should be co-located with the present Marine Corps Development and Education Center (MCDEC). The education functions of the MCDEC should be assigned to the Marine Corps Education and Training Command.

3. The major functions of the Marine Corps Education and Training Command should be the control and management of all separate and subordinate training activities of the Marine Corps. This should include officer and enlisted career development, technical, and recruit training.

4. The Marine Corps Education and Training Command should be assigned the function of early identification of personnel training requirements, job task analysis, and development of training equipment in support of major operational hardware development.

5. The Marine Corps Education and Training Command should make maximum use of the Naval Training Equipment Center as the principal developer of training equipment.

6. The Marine Corps Liaison Office at the Naval Training Equipment Center should be sponsored by the Marine Corps Education and Training Command, but continue to function under the Navy.

7. All Marine Corps Training Support Centers should be managed by the Marine Corps Education and Training Command.

8. The CMC should develop a plan for adjunct staffing of the Marine Corps Education and Training Command and the subordinate Marine Corps training activities with highly selected civilian experts in the field of education and training.

9. The Marine Corps should assign functions for civilian education specialists (GS-1710 series) to include professional expertise in the application of appropriate education technology, learning strategies, education and training requirements, long-range education and training plans, and evaluation of effectiveness of training.

10. The current civilian technician supporting cognizant symbol "20" training equipment should be managed by the Marine Corps Education and Training Command.

11. The CMC should establish a career development program for the civilian education specialists and technicians (supporting cognizant symbol "20" training devices) and this program should be managed by the Marine Corps Education and Training Command.

12. The CMC, through the Marine Corps Education and Training Command, should implement plans for technical schools to be accredited by national associations; e.g., Southern Association of Colleges and Schools.

SECTION I

INTRODUCTION

This report presents the final conclusions and recommendations of a two-phase study on the feasibility of using commercial sources to provide training to enlisted personnel in certain vocational/technical skills. A "commercial source" is defined as any nonfederal industrial organization or nonfederal post-secondary public or private institution engaged in vocational technical training. The study background, problem, approach, and organization of this report are discussed in this section.

BACKGROUND

The concept of using commercial sources to train military personnel in certain vocational/technical skills was conceived by the CNET Executive Staff and assigned to the TAEG for study in August 1972. The potential payoff of the study, in terms of training cost reductions, increased training capability and effectiveness, and beneficial impact upon reserve and mobilization training, was considered sufficient to justify a large allocation of TAEG resources to the study effort.

The study was divided into two distinct phases. Broadly speaking, Phase I addressed the issue of determining concept feasibility. The feasibility of using commercial sources, particularly public vocational/technical institutions, for certain types of skill training was affirmatively concluded at the completion of Phase I. The supporting rationale for this conclusion plus relevant data on commercial training costs, management philosophies, instructional techniques and equipment, training capability, contracting considerations, and other related areas is presented in TAEG Report 13-1.

The determination of concept feasibility led to the decision to proceed with the Phase II (implementation) portion of the study, the results of which are presented herein. Unlike Phase I, concerned only with the application of commercial training to the Navy, Phase II considers the application to the Navy and to the Marine Corps. Inclusion of the Marine Corps in the study was authorized by the CNET on 7 May 1973 in response to the request of the CMC. Thus, two separate reports, one for the Navy and one for the Marine Corps, have been published to document the Phase II study findings and recommendations.

STATEMENT OF THE PROBLEM

This study is based on a problem common to all of the military services; i.e., the problem of increasing the capability to cost effectively satisfy the sophisticated training requirements necessary to meet the growing complexities of modern technology. The complexity of the problem

is compounded by the alarming rate at which training costs have risen during times of severe funding and personnel cutbacks. The goal of this study is to devise solutions to reduce these costs through commercially conducted training. To satisfy this goal, the CNET and Headquarters Marine Corps established two primary objectives for this study:

Phase I Objective - Identify commercial sources which possess capabilities for providing relevant and effective training in selected specialties in support of the Navy training system.

A secondary Phase I study objective, structured to satisfy the stated CNET tasks, was to identify unique and innovative civilian training approaches and practices in the areas of management, program development, instructional techniques, instructional software and hardware, and cost controls which have potential application to Navy training. (Findings are reported in TAEG Report 13-1 and TAEG Technical Memorandum 75-1.)

Phase II Objective - Develop plans, methodology, and final recommendations for utilizing commercial sources, under contract, to conduct Navy and Marine Corps training for selected skills.

STUDY APPROACH

Attainment of the Phase II study objective was based upon specific tasks established by the project team. Completion of these tasks would satisfy all requirements included in the Phase II study objective. These tasks are presented below:

1. Determine the most appropriate commercial sources (i.e., industry, private training institutions, or public VOTEC institutions) to provide training in selected skills for the Navy and the Marine Corps.

2. Determine if the Navy and Marine Corps skills assigned for analysis are appropriate skills for commercial training and, if so, whether the training will be cost effective (refer to table 1).

3. Develop procedures for the management and administration of Navy and Marine Corps commercially conducted skill training programs.

4. Conduct an economic analysis of the cost of Navy, Marine Corps, industry, and public and private VOTEC institutions training.

5. Determine the most effective contractual techniques for procuring training services from commercial sources.

TABLE 1. NAVY AND MARINE CORPS SKILLS ANALYZED

NAVY

NEC	Description	DoD Code
4400	Machinery Repairman	702
3600	Lithographer	740
2514	Yeoman (C)	511

MARINE CORPS

MOS	Description	DoD Code
0441	Logistics Man	551
1121	Plumbing and Water Supplyman	720
1122	Well Driller	730
1141	Electrician	721
1142	Electrical Equipment Repairman	721
1161	Refrigeration Mechanic	720
1171	Hygiene Equipment Operator	840
1173	Hygiene Equipment Repairman	840
1316	Metal Worker	700
1341	Engineer Equipment Mechanic	612
1345	Engineer Equipment Operator	730
1371	Combat Engineer	030
1400	Basic Drafting, Surveying and Mapping Man	413
1401	Basic Mapping Officer	
1402	Mapping Officer	
1411	Construction Draftsman	413
1421	Surveyor	412
1422	Surveying and Drafting Chief	412
1431	Map Compiler	411
1432	Cartographer	411
1453	Mapping Chief	411
1500	Basic Printing and Reproduction Man	740
1501	Basic Printing and Reproduction Officer	
1502	Reproduction Officer	8G
1521	Duplicating Man	740
1522	Offset Pressman	740
1531	Plated Layout Man	740
1532	Process Cameraman	740
1541	Reproduction Chief	740
1542	Reproduction Equipment Repairman	740

TABLE 1. NAVY AND MARINE CORPS SKILLS ANALYZED (continued)

MOS	Description	DoD Code
2511	Hireman	621
2800	Basic Telecommunication Maintenance Man	160
3200	Basic Repairman	790
3201	Basic Repairman Officer	
3202	Repair Services Officer	8G
3211	Fabric Repairman	760
3212	Fabric Repairman Chief	760
3241	Office Machine Repairman	670
3242	Office Machine Repair Chief	670
3253	Repair Chief	670
3310	Bakery Officer	8E
3513	Body Repairman	704
3516	Automotive Mechanic	610
3518	Fuel and Electric Systems Repairman	610
3519	Motor Transport Chief	811
3531	Motor Vehicle Operator	811
3533	Tractor Trailer Operator	811
3537	Truckmaster	811
4002	Data Systems Automation Officer	7E
4006	Data Automation Operations Officer	7E
4010	Digital Computer Systems Software Officer	7E
4013	Card Punch Operator	531
4015	Off-Line Equipment Operator	531
4019	Data System Librarian	531
4033	Computer Operator IBM S/360	531
4034	Master Computer Operator IBM S/360	531
4059	Programmer, Optical Character Recognition System	532
4063	Programmer, COBOL IBM S/360	532
4065	Programmer, ALC IBM S/360	532
4069	System Programmer, IBM S/360	532
4093	Data Systems Operations Chief	532
4095	Data Systems Programming Chief Programmer, Burroughs 3500 Computer Operator, Burroughs 3500	532
4423	Legal Services Reporter - GCM (closed Microphone)	512
4911	Illustrator	414
4941	Audiovisual Equipment Technician	191

6. Develop for the Navy and for the Marine Corps a VOTEC implementation plan to include:

- A proposed Marine Corps Order and a proposed CNET Instruction for VOTEC training.
- General specification for basic skill training by industry or VOTEC.
- Recommended VOTEC management plans using current Navy and Marine Corps chains of command with limited or no additional manpower resources.
- A list of VOTEC institutions, within commuting distance of Navy and Marine Corps installations, and their training capability in specific Navy and Marine Corps skills.
- Cost-effective contract procedures for procuring VOTEC training.

7. Establish standard criteria for evaluating the training capability of commercial training sources.

These tasks were accomplished through the basic study approach discussed in TAEG Report 13-1. Navy and Marine Corps installations (refer to table 2) were visited to obtain data on training skill requirements, training costs and management practices, and to assess operational training needs and utilization of trained personnel. For the most part, data obtained during Phase I on the training capability of industrial organizations and public and private VOTEC institutions were sufficient to meet the Phase II study objective; data gaps were filled in when necessary by additional visits or by correspondence. Major issues, such as the proposed Marine Corps Order, proposed Navy Instruction, contractual procedures, management plans, and skill specifications, were staffed through appropriate organizations (i.e., Headquarters Marine Corps, CNET, Procurement Services Offices, and Training Schools) to insure compliance with established policy and regulations.

The solutions proposed in this report to the problem of effectively reducing training costs will in many cases require progressive changes to established procedures and concepts. If, however, these solutions are accepted in the vein they are proposed, and given a "fair" chance, the probability of success is high. Since the ultimate success or failure of these solutions is dependent on the personnel responsible for implementation, considerable effort has been expended to develop techniques for user implementation of the VOTEC concept. These techniques are presented in Part II of this report.

TABLE 2. MILITARY ACTIVITIES CONTACTED

	NAVY		MARINE CORPS		ARMY
1.	Chief of Naval Education and Training, Pensacola, FL	1.	Headquarters, U.S. Marine Corps, Washington, DC	1.	Defense Mapping Agency Ft Belvoir, VA
2.	Chief of Naval Education and Training Support, Pensacola, FL	2.	Marine Corps Base, Twentynine Palms, CA	2.	Ft Benjamin Harrison, IN
3.	Bureau of Naval Personnel, Washington, DC	3.	Marine Corps Base, Camp Lejeune, Jacksonville, NC	3.	U.S. Transportation School, Ft. Eustis, VA
4.	Service School Command, San Diego, CA	4.	H-S BN 4th FSR FORTRPS Atlanta, GA		
5.	HQ LFTC Amphibious Training Command, San Diego, CA	5.	HQ 4th Marine Reserve Camp Pendleton, CA		
6.	Naval Air Maintenance Training Group, NAS Memphis, Millington, TN	6.	Marine Corps Development and Education Center, Quantico, VA		
7.	Naval Air Rework Facility, Norfolk, VA	7.	Marine Corps Reserve Unit, 4th Service Battalion, 4th Marine Div., Augusta, GA		
8.	NAS Pensacola, FL	8.	Schools Battalion, Marine Corps Base, Camp Pendleton, CA		
9.	Naval Air Technical Training, NAS Memphis, TN	9.	Marine Corps Recruit Depot, San Diego, CA		
10.	Naval Education and Training Program Development Center, Pensacola, FL	10.	Marine Corps Air Station, Kaneohe Bay, Hawaii		

TABLE 2. MILITARY ACTIVITIES CONTACTED (continued)

	NAVY		MARINE CORPS	ARMY
11.	Naval Education and Training Support Center, Norfolk, VA	11.	Fleet Marine Force Pacific Headquarters, Camp Smith, Hawaii	
12.	Naval Guided Missiles School Virginia Beach, VA	12.	Marine Corps Air Station, Futema, Okinawa	
13.	Chief of Naval Technical Training, Millington, TN	13.	3rd Marine Division, FMF, Camp Butler, Okinawa	
14.	Service Schools Command Great Lakes, IL	14.	1st Marine Aircraft Wing, Okinawa	
15.	Navy Personnel Research and Development Center, San Diego, CA	15.	Marine Corps Air Station, Iwakuni, Japan	
16.	Service School Command Orlando, FL	16.	Marine Recruit Depot, Parris Island, SC	
17.	Naval Education and Training Support Center, San Diego, CA	17.	Marine Corps Supply Center Albany, GA	
18.	Naval Education and Training Support Center (Cadre), Hawaii	18.	Marine Corps Recruit Depot, San Diego, CA	
19.	Naval Technical Training Center, Meridian, MS			
20.	Naval Education and Training Support Center, Charleston, SC			
21.	Norfolk Naval Shipyard Portsmouth, VA			

REPORT ORGANIZATION

This report consists of two parts. Part I addresses the major Phase II study issues and includes five major sections in addition to this Introduction. Section II presents a macroscopic view of the Phase I and Phase II "Study Procedures," including the issues involved, their interrelationships and impact upon existing and planned local, state, and national programs and upon the Navy and Marine Corps training philosophies. Specific topics addressed include industry, public and private training institutions, economic analysis, management, contracts, administration, and development of commercial contract training techniques. Section III discusses the Phase II "Study Findings and Conclusions" relevant to such major issues as current DoD training processes and training doctrine; mobilization and reserve training considerations; contract training alternatives; economic, contractual, administrative and management considerations; training source selection criteria; and training certification. Section IV presents the "Proposed Contract Training Implementation Plan" as developed from the study findings and conclusions. A brief "Summary of Study Findings and Conclusions" is presented in Section V. The final "Recommendations" of this study, including short and long range planning considerations, are presented in Section VI.

Part II of this report is an "Area VOTEC Support Center Guidelines" package developed to assist the proposed AVSCs in the implementation, administration and management of VOTEC training programs. This part of the report is published under separate cover (TAEG Report 22-2) with limited distribution. It includes:

- Description of VOTEC Basic Concepts
- Description of VOTEC Coordination Structure
- Description of Typical Functional Process to Obtain VOTEC Training
- Contracting Notes
- Typical Survey Forms
- VOTEC Sources of Marine Corps Related Instruction
- General Specification for Navy/Marine Corps Vocational/ Technical (VOTEC) Skill Training Program

Seven appendices are provided. Appendix A includes the survey forms used in this study. Appendices B and C present detailed analyses of the training capability of industry organizations and of VOTEC

training institutions. Appendix D contains the special forms used in the economic analysis. Appendix E includes information pertinent to the specific MOSs assigned for study, and appendix F presents data describing the current Marine Corps Reserve VOTEC training program. Appendix G is the proposed Marine Corps Order for "Individual Training of Enlisted Marines via Vocational/Technical Schools and Similar Commercial Sources."

SECTION II

STUDY PROCEDURES

This section of the report describes the different study procedures used to accomplish the specific objectives established for this two-phase effort. Emphasis is placed upon the considerations which influenced the selection of major Phase I study issues, procedures for studying these issues, and the impact of these procedures on the Phase II study findings and conclusions presented in the next section. The specific Phase II study procedures used to develop the administraton and management concepts for implementing commercial contract training, establish concept utilization criteria, and to develop the final study recommendations presented in section VI are also addressed.

PHASE I CONTRACT TRAINING STUDY CONSIDERATIONS

The basic study procedures included an exhaustive review of published reports concerned with all facets of commercial training techniques and capability, visits to industrial organizations, public and private VOTEC institutions and Navy training activities, and interviews with key Government and State personnel knowledgeable in training and education. These basic procedures were modified and tailored as necessary to accommodate the specific requirements of each of the major Phase I study issues.

These issues were:

1. Industry (training capability and techniques)
2. Public and Private Nonfederal Training Institutions (training capability and techniques)
3. Training Economics
4. Training Management
5. Training Administration
6. Contractual Techniques.

Considerable time and effort were expended in determining these issues and in developing specific study procedures for these issues. In view of their impact upon the final outcome of the project, many related considerations had to be weighed before final selection of the major study issues. These considerations, and their resolution relevant to the study issues and study procedures of Phase I, are discussed in the following paragraphs.

INDUSTRY. In dealing with the issue of industry training capability assessment, the first problem confronted was that of selecting a valid sample of industrial organizations for in-depth analysis that represented a true cross section of the training capability of the vast American industrial complex. For this reason, considerable research was devoted to screening organizations using such criteria as size, products, skill training programs, location, R&D training programs, and reputation in the industrial training community. These criteria influenced the development of the study procedures as well as the selection of the organizations to be studied. For economic reasons explained in TAEG Report 13-1, industrial organizations near Navy installations would have been preferred for the sample; however, this proved to be an unrealistic requirement in the case of industry.

Provisions for such considerations as union influence, labor market, economic environment, job trends, social programs, and technology trends were included in task study procedures to give a complete picture of industrial training. Data collection questionnaires, tailored to include these and other considerations, were used during visits to all industrial organizations. These visits were structured to address all conceivable factors related to training capability determination and to include all levels of corporate management. The study procedures used proved effective in attaining the Phase I study objective and impacted favorably upon the final study recommendations presented in this report.

PUBLIC AND PRIVATE NONFEDERAL TRAINING INSTITUTIONS. The Phase I investigation strongly suggested that public and private VOTEC schools represent an important potential source of essential Navy training in a wide variety of skill areas. These findings prompted a follow-on effort to identify specific schools and to acquire more detailed and specific data in a number of pertinent areas.

The main thrust of this phase of inquiry was directed toward the public sector, since these institutions appear to offer the more economical and comprehensive resources for contract training.

The selection of candidates for study was based upon their location (i.e., adjacent to Navy and Marine Corps training centers), evidence of some type of accreditation, and the relevance of course offerings to designated Navy and Marine Corps skills.

The method of investigation consisted of on-site visits to the selected institutions by one or more members of the project team, followed by analysis of the raw data obtained. Results of this process are expressed in charts and summaries provided in appendix C.

The initial survey of each school included an extensive review of training offered to determine whether the curricula and facilities were appropriate to meet the needs of the Navy or Marine Corps.

To assure some measure of competency, all VOTEC institutions were required to be accredited by a recognized accrediting agency. The basic accreditation agency for public institutions is any of the regional branches of the Association of Schools and Colleges. Private schools were considered accredited when qualifying for membership in the National Association of Trade and Technical Schools (NATTS), an accrediting agency recognized by the Department of Health, Education, and Welfare.

Visits were made to the Navy and Marine Corps Schools in order to study and compare in detail the management, facilities, methodology, and course content of the selected skills training. Instructional materials, student flow data, equipment lists, cost data, and details of current course revisions were collected for study.

TRAINING ECONOMICS. Training economics was recognized early as a key issue in determining the feasibility of commercial contract training. In order to arrive at this determination, economic feasibility had to be established through comparison of the true cost of training programs conducted by the Navy, industry, and educational institutions. Through early economic analysis efforts, it was established that a standard means of comparing the true training costs of different training activities had not been developed. Therefore, study procedures had to be established for the development of a training cost model to enable the determination of the true cost of Navy and commercial training.

Development of the training cost model dictated that study procedures be developed that would permit efficient collection of data on training costs, costing techniques, cost effectiveness, system analysis relevant to training cost considerations, and cost benefit applications used by the Government and by commercial sources. Literature searches were conducted, visits made, and analyses performed. To aid in this effort, data collection forms were developed and used during all data collection visits.

Sufficient data were collected to develop the training cost model discussed in TAEG Report 13-1. This model is unique in that it may be used by any training activity (i.e., Navy, Marine Corps, industry, and educational institutions) to determine and compare true training costs. It was refined and validated during the Phase II portion of the study and is the basis for the findings and conclusions presented in this report relevant to training economics.

MANAGEMENT AND ADMINISTRATION. While the concept of basic skill commercial contract training might well be both cost and training effective, this can only be accomplished by realistic management and administrative techniques. For this reason an analysis was made of Navy, Marine Corps, corporations, and nonfederal post-secondary schools management and administrative procedures. The rationale for such an analysis was to

insure that military basic skill training requirements could be incorporated into the commercial system. Further, it was essential that the application of the VOTEC program be compatible with the present management and administrative structure of the Navy and Marine Corps. TAEG Report 13-1 provides an understanding of the managerial training concepts being applied by large industrial organizations. It was determined that large corporations are faced with many of the same basic training problems that are found in the Navy and Marine Corps. Industrial training of new hire and seasonal employees is most complex and is compounded due to such external factors as costs, advancement in technology, changes in policy and mission, legal constraints, retirement, and separation. Based on the Phase I observations of the industrial training management, TAEG Technical Memorandum 75-1 was developed to report trends in corporate training management. The basic managerial and administrative data determined in Phase I were modified to provide a realistic implementation of the VOTEC program using commercial sources.

CONTRACTUAL. Phase I investigated various types of training contracts initiated by the Army, Navy, and Air Force under the ASPR. This was considered essential since the ASPR sets forth the policies, procedures, and regulations for all contracts between the DoD and commercial sources.

In addition, the analysis included discussions with Navy procurement specialists, industry contracting representatives, public and private school administrators.

In conjunction with the ASPR analyses, the Phase I study recommended that MIL-STD-1379A, Contract Training Programs, not be applied for the commercial contract training proposed program addressed in this report. It was determined that using MIL-STD-1379A would not be cost effective and would be difficult for private and public vocational schools to administer. Therefore, a specific general basic skill specification was recommended for development.

PHASE II DEVELOPMENT OF COMMERCIAL CONTRACT TRAINING TECHNIQUES.

Phase I data provided a solid foundation upon which the Phase II study objectives to develop techniques for implementing the commercial contract training concept could be pursued. Based primarily on economic considerations, the decision was made to concentrate on VOTEC training institutions for the desired skill training. The application of the Phase I data to the Phase II objective required modification of previous study procedures and also the resolution of many related considerations that would impact significantly upon the final implementation plan, procedures, and recommendations. These considerations are summarized in table 3.

In view of the decision to concentrate on VOTEC institutions, and because Phase I data were adequate, only limited attention was devoted to acquiring industrial data during Phase II. Additional VOTEC institution data, however, were required to support the Marine Corps requirement and for resolution of the considerations set forth in table 3. Furthermore, the economic issues required substantial data in order to permit valid comparison of military and civilian training costs.

The basic study procedures used in Phase I were modified as necessary and used to acquire required data through visits to VOTEC institutions and Marine Corps activities. Visits were also made to various state offices responsible for VOTEC training in the states of interest to this study. Data obtained from these visits and through review of published reports were used to evaluate skills for VOTEC training and to develop implementation procedures and final study recommendations. The study forms used in obtaining these data are presented in appendix A.

A major portion of the visits were to military headquarters and field activities. This not only enabled collection of the required economic and skill data but also provided firsthand knowledge of existing command structures, training management, field training needs and problem areas, skill utilization of trained enlisted personnel, mobilization training issues, and reserve training. These data proved invaluable in developing final concepts for implementation of VOTEC training. These concepts were discussed with appropriate Navy, Marine Corps, and civilian authorities.

TABLE 3. PHASE II CONCEPT IMPLEMENTATION CONSIDERATIONS

PROGRAM MANAGEMENT
PROGRAM ADMINISTRATION
CONTRACTUAL TECHNIQUES
PROGRAM CONTROL
PROGRAM FUNDING
TRAINING COSTS
TRAINING SOURCE SELECTION
SKILL SELECTION
RESERVE TRAINING
MOBILIZATION PLANNING
PEAK LOAD TRAINING
INTERSERVICE TRAINING
MILITARY ENVIRONMENT
LOW VOLUME TRAINING REQUIREMENTS
MILITARY/CIVILIAN COMMUNITY RELATIONS
TRAINING CERTIFICATION
UNIQUE MILITARY SKILL TRAINING REQUIREMENTS

SECTION III

STUDY FINDINGS AND CONCLUSIONS

This section of the report presents the Phase II study findings and conclusions relating to the major issues concerned with implementation of commercial contract training programs. These issues include current DoD training processes and training doctrine, mobilization and reserve training, contract training alternatives, economic and contractual considerations, administration and management techniques, source selection criteria, and training certification. Also included in this section are the findings of the selected Marine Corps skill analysis and comparative training capability analysis.

The findings and conclusions addressed in this section are the basis of the "Proposed Contract Training Implementation Plan" presented in section IV and the "Area VOTEC Support Center Guidelines" included as Part II of this report. Emphasis is placed upon supporting data relevant to the major study findings, rationale for the conclusions developed from these findings, and the significance and impact of these findings and conclusions on the development of procedures for applying the commercial contract training concept to supplement certain Marine Corps training programs.

CURRENT DOD TRAINING PROCESSES AND TRAINING DOCTRINE

The training doctrine and processes of the DoD have undergone significant changes in recent years. These changes are reflected in the current attitude toward training, training philosophy, and training techniques. The reasons for these recent changes are many and complex; however, two major ones appear to be the recognition by top DoD management officials that training costs represent a significant percentage of the Defense budget and that, during peacetime, each of the armed services assumes a purely training and planning mission. This latter reason is even more significant in view of the fact that approximately 50 percent of the Defense budget goes for manpower costs, which include training as well as active duty pay and retirement.

The armed services have traditionally borne the responsibility for training their own personnel in the skills required to support their respective missions. Although various approaches are being explored, such as the concept set forth in this study, this tradition remains basically unchanged. Exceptions to this have been in the areas of factory training programs for new weapon systems and special training requirements. The fact that concepts such as commercial contract training are being explored is indicative of the gradual changes in attitude and philosophy taking place within the armed services.

The Marine Corps, for example, is actively exploring many dynamic training and training related issues, which if proven feasible, have the potential of effecting needed stimulating changes to the Marine Corps training processes. Representative of the progressive concepts being investigated, and in some cases implemented, are:

1. Computer Assisted Instruction (CAI) - CAI is used extensively at C&E School, Twentynine Palms, California, in conjunction with a hands-on learning environment. Approach provides self-paced, individual instruction with such advantages as instantaneous grading, data collection and reduction, objectivity, and standardized instruction.

2. Interservice Training - The Marine Corps is participating in plans to establish interservice skill training programs where feasible.

3. Servicemen's Opportunity Program - DoD-wide program instituted in July 1973 which affords all active duty personnel the opportunity to acquire free education through DoD contractual arrangements with over 1000 high schools, two-year community colleges, and four-year universities located throughout the 50 states.

4. Task Analysis - Special program established to perform task analyses of Marine Corps MOS skills. Program has been computerized to facilitate data reduction.

These are but a few of the progressive training concepts being explored by various elements of the DoD, including the Marine Corps. Others include application of advanced instructional techniques and equipment and innovative training management systems. Findings indicate that such progressive inquiry was badly needed by all elements of the DoD and should be encouraged and supported by all levels of management. Progressive training concepts, if properly developed, structured, and administered can have far-reaching beneficial impact upon many issues of major concern to today's armed services. A few of these issues include:

1. Recruiting and Reenlistment
2. Motivation
3. Training Costs
4. Morale
5. Manpower Management
6. All Volunteer Force
7. Personnel

These issues are addressed in greater detail in subsequent discussions in this report. Their impact upon the major objectives of this study and upon current DoD training processes and training doctrine is significant. As previously indicated, the DoD training processes and doctrine are undergoing significant changes which should be encouraged. As stated by Dr. Eli Ginzberg during his presentation to the Industrial College of the Armed Forces on 24 September 1971, "... one of the most serious defects in the management of Defense manpower is the failure to make the radical changes in policy that are needed to make full use of people's capability and open up opportunities for career advancement." Such radical changes appear to be taking place in DoD training processes and training doctrine.

MOBILIZATION AND RESERVE TRAINING

Application of commercial contract training to Marine Corps Reserve programs and to mobilization planning was not the original consideration of this study. Attention was drawn to these issues as a result of TAEG interaction with various Marine Corps active duty and reserve organizations.

Analysis of the VOTEC program instituted by the 4th Marine Division, FMF, USMCR, provided a comprehensive understanding of reserve training problems. This VOTEC program was primarily developed as a means of overcoming the problems caused by the reduction of Initial Active Duty Training (IADT) from 180 to 120 days. This action significantly reduced the number of formal MOS qualifying schools available to reservists thereby increasing the MOS training responsibilities of the individual reserve units. Consequently, the VOTEC program was designed to satisfy existing needs for hard skill MOS training through utilization of existing civilian VOTEC training institutions.

Study findings indicate the VOTEC approach for promoting individual proficiency to be an economical and effective means of training reservists in a variety of hard skill MOSs. The analysis of the 4th Marine Division VOTEC program indicated the average cost to be $1.49 per student course hour which is significantly less than that of industrial organizations and most in-house programs. This cost is based on 30 courses, averaging 145 hours per course, conducted at 20 different VOTEC institutions. Detailed information relevant to program costs is presented in subsequent sections of this report and in Appendix F.

It is the conclusion of this study that programs should be established with VOTEC institutions to supplement existing reserve training programs for MOS qualification and refresher training. The proposed Marine Corps Order, included as appendix G, sets forth procedures for implementing such programs for both active and reserve components. Furthermore, Part II of this report provides detailed guidance for the

implementation, control, and management of the VOTEC program. Benefits to be gained by using civilian VOTEC institutions to supplement Marine Corps Reserve training include:

1. Provide high caliber training resource for MOS qualification and refresher training

2. Reduce reservist training demand on Marine Corps MOS qualifying schools

3. Provide cost-effective training

4. Increase unit combat readiness

5. Reduce unit training support requirements

6. Reduce qualified MOS instructor problems

7. Provide reenlistment incentive

8. Increase individual motivation and morale.

Mobilization planning documents reviewed during this study refer to a limited number of universities, trade schools and industrial organizations as training sources during time of mobilization. No reference is made to VOTEC institutions. As with reserve training, these VOTEC institutions should be seriously considered in mobilization planning. These institutions can rapidly and effectively respond to critical training needs, in a number of hard core MOS skill areas, in time of mobilization. Furthermore, existing curricula may be modified and/or new curricula developed to satisfy special MOS training requirements. Utilization of these institutions would:

1. Significantly reduce the training load imposed upon Marine Corps MOS qualification schools

2. Free combat ready Marines for action

3. Increase total capability to respond to an emergency.

Though not recommended for reserve training because of cost-effectiveness considerations, nondefense oriented industrial activities represent excellent training sources during mobilization and should be emphasized more in mobilization plans. Industry as a whole, has the capability to provide training in practically every skill area, including advanced training for Marine Corps systems. The merits of using VOTEC institutions during mobilization apply equally to industry.

CONTRACT TRAINING ALTERNATIVES

Three commercial contract training alternatives were examined during this phase of the study. They were:

1. Skill training through contract with Industrial Organizations
2. Skill training through contract with Private Training Institutions
3. Skill training through contract with Public VOTEC Training Institutions

From a purely training capability viewpoint, any one of these alternatives could be used to acquire training in selected Marine Corps skills; however, other issues had to be examined in order to determine the best alternative in terms of total effectiveness and utility to the Marine Corps. Regardless of the alternative chosen, there will always be the requirement to evaluate training sources on a case-by-case basis using criteria appropriate for the specific training requirement.

The key issues examined in the evaluation of these alternatives were training cost, training effectiveness, administration, and location. Other issues, unique to certain alternatives, were also examined and in many instances required a value judgment in order to arrive at a final decision. All of the issues examined, and their impact upon the commercial contract training concept, are addressed in the separate discussions which follow.

INDUSTRY. The industrial complex possesses, in terms of number of different skill training programs, a greater training capability than any of the other alternatives considered. This conclusion is supported by the data presented in TAEG Report 13-1 and by the results of the "Industry Training Capability Analysis' presented in appendix B. This analysis is based on the data acquired from the industry sources identified in table 4 and does not begin to indicate the total training resources of industry. For the purposes of this study, however, the sample was sufficiently large to provide meaningful data.

Although the total training capability of industry is sufficient to meet many of the Marine Corps' basic, advanced, and special training needs, there are various factors which reduce the overall utility of this alternative for commercial contract training. One of the most serious factors is the cost of procuring training services from industrial sources. The cost, to the Marine Corps, of procuring basic skill training from industry is considerably higher than procuring the same training from public VOTEC institutions and in many instances higher than private training institutions. Industrial training costs, discussed in detail under "Economic Considerations" presented later in this section, are higher due to the profit, overhead, and General and Administrative

TABLE 4. INDUSTRY SOURCES CONTACTED

American Airlines	International Business Machines
American Telephone & Telegraph	Eastman Kodak Company
Boeing Company	McDonnell Douglas Corporation
Coca Cola Company, USA	Martin-Marietta Corporation
Control Data Institute	RCA Service Company
Delta Airlines, Inc.	Singer
Eastern Airlines, Inc.	Sperry Rand
Flight Safety, Inc.	Southern Bell
Florida Gas Company	Texas Instruments, Inc.
Florida Power Corporation	Trans-World Airlines, Inc.
Ford Motor Company	United Airlines
General Electric Company	Virginia Central Industries
Goodyear Tire & Rubber Company	Westinghouse Electric
General Motors Corporation	Western Electric
Grumman Aerospace Corporation	Xerox

(G&A) charges which are normally greater than those of private institutions and practically nonexistent for the Federal and state supported public institutions.

Location of facilities is another factor which reduces the attractiveness of the industry alternative. Generally speaking, industrial organizations possessing required training programs are not located near major Marine Corps installations. This is a distinct disadvantage since travel to distant locations would significantly increase total training costs through the expenditure of monies for travel, messing, and berthing. Furthermore, the student would be removed completely from the Marine Corps environment (considered an undesirable situation) and overall administrative problems would be increased.

Industry training programs are normally designed to meet company and/or Government established standards. Although industry will design training programs to meet specific Marine Corps requirements, these programs, and existing programs, would not normally be accredited as would those of accredited public and private training institutions. Accreditation could probably be obtained for industry training programs, but this would be a costly and time-consuming process where the benefits obtained would be questionable in terms of effort and money expended.

From a purely contractual viewpoint, industry training programs would, at least initially, be less difficult to initiate and administer because most industrial organizations are familiar with DoD contracting procedures. Generally speaking, public and private training institutions are not familiar with these procedures and would therefore require a certain amount of education.

The majority of industrial organizations contacted during this study indicated a desire to conduct and, if necessary, design programs for Marine Corps basic skill training. The previously discussed disadvantages of using industry for this type of training are sufficient to eliminate this alternative for commercial contract training. This conclusion, however, does not preclude the utilization of this vast training resource to supplement other Marine Corps training programs. For example, the industrial complex is better equipped than public and private training institutions to support training programs in unique skills, such as cable splicing and weapon systems. Furthermore, non-defense industrial organizations are well equipped to support mobilization training requirements and may also be used to effectively support the training requirements of individual Marine Corps Reserve units where public or private training institutions are not readily available.

To take full advantage of the training capability of the industrial complex for mobilization, reserve, and special training situations, it is necessary to develop a complete training capability file that includes

a large cross section of the complex. This file would enable the Marine Corps to rapidly draw upon the appropriate industrial organization(s) to satisfy their special training requirements.

PRIVATE TRAINING INSTITUTIONS. Private training institutions are rightfully classified as part of the industrial complex, for, like the other industrial organizations included in this study, they operate on a profit-making basis. Relevant to the objectives of this study, private training institutions have one major distinction which sets them apart from the remainder of the industrial complex and which impacts upon the evaluation of this alternative for contract training. This distinction is due to the fact that training is the only product offered by private training institutions, whereas with the majority of industrial organizations, training is a necessary function in support of a primary product or, in some cases, offered to other clients but as a secondary product of the organization.

Because training is the only product offered by private training institutions, the cost of their training programs to the Marine Corps would normally be less than like programs provided by other organizations of the industrial complex. This is primarily due to the fact that the G&A, overhead, and burden costs are less for these institutions. The cost of private training institution courses is still considerably higher than the cost offered by public training institutions which are supported by Federal, state, and local funds and do not operate on a profit-making basis.

The private training institutions included in this study were those involved with trade and technical training programs. Although an in-depth analysis was not conducted for these institutions, sufficient data were obtained from published literature to permit a meaningful assessment of training capability (refer to appendix C). The overall capability, measured in terms of different programs offered, is impressive and could be used to satisfy many of the Marine Corps' basic skill training requirements. Furthermore, existing programs are more compatible with Marine Corp skill training programs than those of existing industry programs which are often oriented to specific product lines. Unfortunately, many of these institutions limit their programs to several specific occupational areas; i.e., aircraft, automotive, and retail, and do not individually offer the complete occupational selection available in most public training institutions.

Location is a problem but not as serious a problem with private training institutions as it is with industry. Findings indicate that there are institutions located within reasonable commuting distances of some of the Marine Corps installations included in this study. However, programs offered by these institutions may be limited to specific skills, as previously discussed, which may or may not be the skills of interest to the Marine Corps.

There is no reason to believe that contractual training programs with private training institutions, located near Marine Corps installations, would be difficult to administer if properly implemented. Techniques for implementing such programs are discussed in Part II of this report. There are certain administrative considerations unique to contract training programs that have to be resolved; however, these considerations are equally applicable to all of the alternatives investigated. These administrative considerations are discussed later in this section.

In the case of private training institutions, accreditation is a voluntary matter and the individual school must apply on its own initiative. This subject is addressed in TAEG Report 13-1. Over 350 private trade and technical institutions have been accredited by the NATTS. Although accreditation does not guarantee quality training, it is generally considered to be the most authoritative index of a school's standing within its own profession and within the national and world communities. Marine Corps personnel attending private institutions could benefit by receiving accredited training. Furthermore, most accredited private institutions provide training certification which is recognized by most unions, industrial organizations, and institutions of higher learning.

As with industrial organizations, most private training institutions are receptive to training Marine Corps personnel under contract. Although these institutions have several advantages over industry, the cost of training is sufficiently greater than the cost of comparable training offered by public training institutions to eliminate this alternative for commercial contract training. Furthermore, the relatively limited programs of individual institutions pose unnecessary limitations on the concept of commercial contract training. Private training institutions should, however, be included in mobilization planning and can be utilized to support the training requirements of many Marine Corps reserve units where public institutions are not available. The effectiveness of using such institutions to support reserve training has been demonstrated by the Marine Corps Reserve VOTEC program. Data representing the cost effectiveness of this program are provided in appendix F.

PUBLIC VOTEC TRAINING INSTITUTIONS. Of the three commercial contract training alternatives evaluated, public VOTEC training institutions offer the most advantages to the Marine Corps, with none of the previously discussed disadvantages of industry or private training institutions. These institutions represent an impressive training resource which has been virtually overlooked by the Marine Corps for basic skill training. They offer a wide selection of basic and advanced skill training programs representing a multitude of occupational skills. These programs are generally available at the majority of public vocational institutions and satisfy many of the basic training requirements for Marine Corps skills. The training programs of institutions near Marine Corps installations of interest to this study are discussed in detail in appendix C. Specific institutions contacted are included in table 5.

TABLE 5. INSTITUTIONS CONTACTED

Albany Area Vocational/Technical School (GA)
Atlanta Area Technical School (GA)
Augusta Area Technical School (GA)
Beaufort Technical Education Center (SC)
Chapman College (CA)
Chesapeake College (VA)
Coastal Carolina Community College (NC)
College of Lake County (IL)
Craven Technical Institute(NC)
East Central Junior College (MS)
Fairfax County Public Schools (VA)
Florida Technological University (FL)
Florida Junior College at Jacksonville (FL)
Gateway Technical Institute (WI)
George Stone Vocational Technical Center (FL)
George Washington University (Washington, DC)
Grossmont College (CA)
Harper Community College (IL)
Honolulu Community College (HI)
John Stennis Vocational Center (MS)
Kapiolani Community College (HI)
Leeward Community College (HI)
Lenoir Community College (NC)
Lynchburg Vocational School (VA)
Macon Vocational Technical Institute (GA)
McHenry Community College (IL)
Memphis Area Vocational Technical School (TN)
Meridian Junior College (MS)
Meridian Separate School (MS)
Mid-Florida Technological Institute (FL)
Miracosta College (CA)
916 Vocational Technical Institute (White Bear Lake, MN)
Norfolk Technical Vocational Center (VA)
Norfolk State College (VA)
North Georgia Technical & Vocational School (GA)
Northern Virginia Community College (VA)
Nova University (FL)
Oakland Community College (MI)
Oakton Community College (IL)
Old Dominion University (VA)
Palomar College (CA)
Pensacola Junior College (FL)
Pinellas Vocational Technical Institute (FL)
Racine Technical Institute (WI)
Rollins College (FL)

TABLE 5. INSTITUTIONS CONTACTED (continued)

Saddleback College (CA)
San Diego City College (CA)
San Diego Evening College (CA)
San Diego Mesa College (CA)
Seminole Junior College (FL)
Southwestern College
State Technical Institute at Memphis (TN)
Thomas Nelson Community College (VA)
Tidewater Community College (VA)
Trident Technical College (SC)
Triton College (IL)
University of South Florida (FL)
University of Northern Colorado (CO)
University of Hawaii (HI)
University of Virginia (VA)
Valencia Junior College (FL)
Virginia Beach Vocational Technical Center (VA)
Virginia Wesleyan College (VA)
Walworth Technical Institute (WI)
Wayne Community College (NC)
Western Wisconsin Technical Institute (WI)
Windward Community College (WI)
Wymore Vocational Technical Center (FL)

There are over 2500 accredited public VOTEC institutions in the United States and this number has been increasing at the rate of 125 per year. There is at least one of these institutions located near the majority of Marine Corps installations included in this study. Of interest is the fact that a few of these institutions have housing facilities, a capability that the industrial organizations and private training institutions studied did not have. Furthermore, the majority of public institutions have cafeterias which charge nominal rates for meals.

The cost per student instruction hour at public VOTEC institutions is approximately $1.50, considerably less than comparable costs of either industry or private institutions. These costs are addressed in the "Economic Analysis" discussion presented later in this section and also in appendix F. The comparatively low cost of public VOTEC institution training is attributed to the funding support provided by Federal, state, and local governments and the nonprofit basis on which these institutions operate.

Most public VOTEC institutions have limited experience in dealing with the administrative and contractual aspects of DoD-sponsored programs. For this reason, these institutions would require a certain amount of time to become familiar with DoD procedures. This issue was discussed with various state officials and determined to be a minor problem that would be easily eliminated through experience. Various administrative considerations peculiar to the concept of commercial contract training are addressed later in this section and in Part II of this report.

Public VOTEC institutions exist to serve the training needs of the community (refer to TAEG Report 13-1). For this reason, care must be taken to avoid overloading an institution with Marine Corps students and possibly denying civilians the opportunity of receiving training. Such a situation could have a significant adverse impact upon the military-civilian community relationship. The advantages associated with accreditation would be available to Marine Corps students attending public VOTEC institutions as these institutions are all accredited. This insures not only quality training but provides a positive incentive for students to continue their education and to reenlist in the Marine Corps.

Based on the study findings previously discussed, it is concluded that public VOTEC institutions are the best commercial source for training Marine Corps enlisted personnel in selected skills. These institutions offer quality training in a wide variety of occupational skills, are cost effective, and pose no unusual program administration problems. Furthermore, these institutions have indicated a desire to train Marine Corps personnel and will tailor programs to meet specific Marine Corps requirements. Public VOTEC institutions are an ideal source for Marine

Corps reserve training and should likewise be included in Marine Corps mobilization planning. The proposed contract training implementation plan presented in section IV is based on using public VOTEC institutions. Part II of this report is also based on the utilization of these institutions.

ECONOMIC ANALYSIS

The objective of this subsection of the study was to ascertain the feasibility of utilizing commercial sources of VOTEC training for initial basic skill qualification of enlisted personnel for the Navy and Marine Corps. Certain constraints imposed by the ASPR which preclude pre-contract negotiation on planned programs coupled with the reluctance of contractors to give firm prices for specific courses of instruction under such conditions inhibited the gathering of precise cost data from commercial sources. Sufficient data were obtained, however, to enable valid comparisons to be made with historical data and available data from intermittent VOTEC efforts conducted by the Armed Forces during the past five years. Of particular significance were the data provided by the ongoing VOTEC training program of the 4th Marine Division.

THE PLANNING PERIOD. A decision to utilize civilian sources for military training must be based upon an analysis of both long-run and short-run effects. Given administrative flexibility for decision making, the degree to which training resources can be redirected depends to a large extent on the operational and/or planning period. The longer the period, the greater the flexibility.

At any point in time, decisions which involve the utilization of resources must deal with the fact that some will be subject to manipulation while others, by their nature, must remain fixed. The operational decisions which training managers make are essentially decisions of how most effectively to combine the variable resources with the fixed resources to meet the training goals. The planning decisions involve how best to adjust--in the long run--the fixed resources to attain long-term efficiency.

Long-run planning commitments made in the present effectively place limits on the operational options that will be available in future periods. For this reason, decisions to undertake certain investment options may well depend on the degree of flexibility necessary for future periods. This, in turn, is fundamentally related to the degree of uncertainty involved in the decision.

Given the necessary administrative authority, in the long-run, all resources are theoretically variable; i.e., all resources can be utilized in whatever manner planners choose. Since complete flexibility prevails, the costs of all resources are relevant. Consequently, in comparing civilian to military alternatives for planning purposes, all costs need to be included.

All conditions being equal, whether training is done by the military or nonmilitary, there is no apparent reason why total long-term training costs should differ. If both the military and civilian institutions use the same resources to train the same numbers to the same skill levels, then costs should not differ significantly.

When making comparisons of military programs with civilian programs, all conditions are seldom equal. The extent to which there exist differences in programs, there exists the potential for cost differentials. Therefore, it is problematical to make long-run planning decisions on the basis of cost differentials between existing military and civilian programs.

If all costs and benefits of both military and civilian alternatives could be quantified and considered in an economic analysis, then cost minimization (or benefit maximization) would be both necessary and sufficient criteria for selection among alternatives. Obviously, quantification cannot be carried to this extreme. There are many intangibles which defy quantification. For example, to what extent can the permanence of such arrangements be assured? Can the civilian training capability be responsive to changing requirements dictated by technological changes and mobilization requirements? Are the specialized requirements available in civilian facilities and are they consistent with military requirements? These and a host of other questions which are specific to each skill area must be recognized and addressed. These intangibles, when considered, may at times be the determining factor in the choice of alternatives. When neither the military nor civilian alternatives can be shown to have an advantage in efficiency, then the decision must be based on the nonquantifiable factors.

THE OPERATIONAL PERIOD. Just as future operational options will be limited by the present planning decisions, the present operational options were set by past planning decisions. Because of uncertainty, technological limitations, and imperfect planning decisions made in the past, most training systems will not be optimally designed in terms of long-run efficiency. Furthermore, because the expected loss or failure to meet training requirements is undoubtably greater than that of acquiring and maintaining surplus capacity, one can expect to find surplus capacity existing in many training systems--both military and civilian.

The utilization of this surplus capacity in civilian institutions represents a significant opportunity for cost savings for military training. The potential dollar value of these savings depends upon a summation of savings from individual skill areas and cannot be estimated with any significant reliability without an analysis of each skill area.

OPPORTUNITIES FOR EFFICIENCY IMPROVEMENTS. If the total training in numbers and proficiency levels is to be maintained, then reductions in total training costs can be achieved through improvements in managerial practices, advances, and adoption of more efficient educational technology, scale economies, or reduction in the cost of resources used.

The largest payoffs in absolute terms will come from improvements in those skill areas where the greatest absolute expenditures occur. Often, relatively minor changes in techniques in these skill areas can effectuate substantial benefits. Unfortunately, these are also the skill areas where there appears to be little opportunity, using existing sources, to implement civilian programs.

An analysis of data and opportunities suggests that the greatest potential for savings occurs by mixing military and civilian programs because of scale economies. Although the possibility for large savings in any one skill area is thus attenuated, there are many such skill areas and, in total, may represent significant potential for savings.

RESOURCE COSTS. The decision to utilize either military or nonmilitary training will depend, primarily, on their relative costs. There are two central questions which must be addressed for each skill area. First, which resources are relevant to the decision, and second, what value (or cost) must be placed on those resources.

The relevant resources are determined by the time frame of the decision and the administrative level at which such decisions are made. The higher the administrative level, the more latitude the decision maker is likely to have in determining alternative resource use. What, therefore, may be considered a relevant cost at high administrative levels may be a fixed resource at lower levels. Working within the administrative constraints, one can determine which resources are amenable to control and manipulation.

The time dimension of analysis is the second determinate of relevant resources. Only those resources which can be diverted to alternative uses over the analytical period are properly counted costs. For example, a manager of a training system may determine, through analysis, that considerable savings could be realized by using nonmilitary sources, but to realize the savings would require the liquidation of military facilities used in the existing program. If it is not within his jurisdiction to make the decision to liquidate, and it is obvious that such decisions to liquidate would involve a time lag extending beyond the period for which the operational decision was being made, then such savings are unrealistic and should not be counted in evaluating the alternative. The facilities actually have zero opportunity costs and become a "free" resource for the evaluation of that particular military alternative.

The value placed on relevant resources must be defined in terms of opportunities foregone. This concept of costs presents no particular difficulty for those resources to be acquired. In a market economy, the resource prices are usually a reflection of their value in alternative use and using acquisition cost as a basis for resource allocation will lead to efficient solutions.

Difficulties do, however, arise in determining the opportunity costs of resources already owned and which make up the large capital stocks of investments supporting the alternatives. The identification and evaluation of alternative uses can be one of the most difficult aspects of economic analysis. The correct cost of stock resources is their potential worth in their most "lucrative" alternative use. Often, poor or no alternatives exist for the use of owned resources and the opportunity cost of using these resources to fulfill mission objectives is negligible.

SCALE ECONOMIES. Scale economies occur when average costs of training are reduced as a function of the numbers trained. While certain scale economies may be realized by implementing particular management policies within a training system, others can occur only with changes in output levels. Since most training commands have limited opportunities to control demand for numbers trained, they have minimal opportunity to realize scale economies by making internal changes.

The combination of duplicate training facilities, more intensive use of existing facilities, or combining of military and civilian training all represent ways in which scale economies can be realized. The recent interservice training effort is justified primarily on the basis of scale economies. If any long-run savings are to be realized by combining the civilian and military training effort of particular skill areas, then in large measure these savings can likely be attributed to scale economies.

Scale economies arise from (1) technology factors and (2) specialization. As the scale of operation increases, there is a greater opportunity to bring together a wider range of technological innovations and mesh them into a viable and efficient training system. Often, the capacities of particular innovations must be acquired in discrete blocks. For example, it is not feasible to develop a CAI system for one student. When the scale of operations is small, the choice may be limited to acquiring the innovation and have a great deal of excess capacity, or foregoing the utilization of the innovation in favor of those which are less efficient but more adapted to small scale operations. Thus, economies arise because of a better meshing of technology and qualitative changes in technology as scale of operations increases.

Scale economies also arise because of lower average acquisition and implementation costs of facilities and equipment. The costs of implementing a skill training program for 100 students will not be 10 times the cost of implementing for 10 students.

The second major source of scale economies arises from specialization. For example, an instructor who has a sufficient number of trainees in any one skill area to warrant his full-time efforts will become more efficient than one who must share his time among several courses. Large programs can also support specialists in areas such as course material development.

ECONOMIC ANALYSIS. The data from which the following findings are deduced do not represent a sample of all Navy, Marine, or civilian skill training. The observations were selected on the basis of skill areas dictated by the scope of the study. The reader is admonished not to draw inferences about all Navy, Marine, or civilian training from information presented. The objective was to focus attention on those skill areas which, for one reason or another, the training might be more efficiently done at nonmilitary facilities.

Conditions may exist in either a military or commercial training system which render it technically, economically, or politically impractical to implement training which simultaneously captures desired training objectives and cost efficiencies. Emphasis on commercial sources of initial skill qualification training stems from the study mandate to identify a cost-effective program approach and not from any inherent bias toward industry or trade schools. Initial data screening indicated contract training from industry for basic skills training to be the least desirable approach due to economic and political considerations. Private institutions were generally found to be less desirable from a purely economic standpoint than public institutions.

An estimate of the absolute magnitude of cost savings was not attempted. For any realistic estimate of potential cost savings to be made, it is necessary to develop specific training objectives for each skill area and to identify those civilian sources where that training can be technically accomplished. Since civilian basic skill programs may not always have identical training objectives as required by the military, there may be some need to reorganize and redirect some of their resources to develop and implement a program which will satisfy the military training goals. Until specific proposals, including constraints, are presented to these institutions, it is not practical to attempt to determine the comparative costs involved.

Resources devoted to the economic phase of the study were sufficient to permit a visit to and evaluation of each training site. The reliability and completeness of the data collected were a result of the accuracy with which managers completed survey forms. Although most were

carefully completed, some lacked detail and completeness to be of significant value. Data were obtained for approximately 50 Navy, Marine, and civilian skills. The training sites of a number of other skill areas were visited and descriptive data obtained. A number of skill areas were not pursued in detail because they were currently undergoing reorganization or redirection.

Because of low enrollments, many Navy and Marine Corps basic courses were relatively expensive. In some instances, low enrollment courses have been cancelled. Examples are Navy Lithographer and Marine Corps Illustrator Draftsman training. The technical requirements of these courses make them ideal candidates for training by civilian VOTEC programs. Again, a final determination must be based on an examination of individual course requirements and the VOTEC institution capability.

Several courses which involved heavy investment in operational equipment also had relatively high average costs of training. Notable examples were the engineer equipment operator and engineer equipment mechanic courses. To single these courses out as examples of high cost courses is not a condemnation of their management. In fact, for these particular courses, there was considerable evidence of use of a number of innovative ideas and in-house developed training devices. These undoubtably contributed to more efficient utilization of the training resources.. The costs were high for reasons beyond the operational manager's control. If the managers are constrained to training a few operators on operational equipment, then there are few internal management adjustments which can be made to significantly improve efficiency or reduce training costs. Alternative solutions must be found which capture, where possible, scale economies or which employ more efficient training technology. Civilian institutions may very well offer one solution to these problems. Interservice training is also being considered for the above courses and may prove a more feasible alternative.

It was apparent from visiting numerous nonmilitary facilities that for most skill areas there was excess capacity for low density inputs which could be depended upon to exist for a reasonable length of time. Many administrators indicated a willingness to expand their program if they could be assured that such expansion would not diminish their ability to serve their local clientele. Any long-term contracts which are negotiated with these institutions for high density inputs, however, will have to be done by guaranteeing that, if and when expansion is required to satisfy the local demand for training, the military will have to assume the fully allocated costs of its own training.

The short-term situation, therefore, is substantially different. With few exceptions, administrators were receptive to participating in programs which would be meshed into their own programs. This was especially true for those skill areas in which they had excess capacity.

Not only were administrators eager to have their capacity utilized but most indicated that the cost of military participation would be rather nominal.

In every civilian institution visited, there were skill areas for which there existed the capability to develop and implement courses which would fulfill specific military training requirements. Every school did not have the technical capability or capacity to train in every skill area, but in a cross section of civilian schools visited, most skill areas were covered.

The implication is that, for both the present and future, many opportunities to utilize VOTEC institutions for military training will be available. If the military will adopt a management policy which will emphasize and permit flexibility at the operational level, there is considerable evidence to indicate that a good deal of military training can be acquired at very nominal costs. This flexibility will require that contract procedures, technical specifications, and implementation authority and procedures are readily available which will facilitate functional management's use of these VOTEC institutions as the need and opportunity arise.

The Marine Corps Reserves have recently obtained VOTEC training in 25 civilian institutions. More than 40 courses were taught in these institutions and the average weighted contract cost was $1.49 per student instructional hour. Nearly half of this instruction was acquired for a contract cost of less than $1.00 per hour. These courses were relatively short-term commitments--an average of 110 hours per course. Average military enrollment was 13 students per course. Such is typical of the magnitude of costs involved for the short-term low enrollment courses.

A majority of the civilian VOTEC schools received heavy public support. The tuition and fees charged their students did not cover all their costs. For the military to participate in those programs on a long-term basis at charges commensurate with costs levied on the civilian students, it will be necessary that these vocational schools continue to receive their subsidies in analogous proportions to that currently received. Most of this current support comes from local and state sources.

Private VOTEC institutions involved in training are usually highly cognizant of their long-term costs and will attempt to price their training at a level which will cover these costs. Any civilian institution which must derive its total support from its own output will seldom engage in any long-term training contracts for which total costs are not covered. The military may at times be able to obtain training from these institutions at costs which are less than their true long-run costs; however, a profit-making institution which is in a position of

having to price its training at less than average costs will immediately engage in the type of planning which will result in a profit situation. Although the military may be able to obtain short-term/low-cost contracts from private institutions, they will not be able to obtain long-range contracts which extend beyond the time necessary for these institutions to adjust their capacity to that level which permits a fair long-run return to invested capital.

MANAGEMENT AND ADMINISTRATION

The administrative structure of the VOTEC program is four tier. The design calls for first level centralized management of policy and funding at Headquarters Marine Corps, with second level implementation management at designated major commands. Co-located with level two administration, but separate from, are the level three AVSCs providing user services within their geographic areas of responsibility to the level four field commands requiring basic skills training via the VOTEC program.

The individual nature, intent, and purpose of regular and reserve forces has historically provided a dual command structure for these forces in the areas of administration and training. Modern warfare has dictated a readiness posture for reserve forces, however, equal to that of the regular forces. For this reason, overall management policy of the VOTEC program should be a single agent responsibility. The dual command structure cited above, however, suggests that dual budget and funding channels (regular and reserve) will be required for efficient administration of VOTEC within the Marine Corps. A primary administrative decision to be made will be that of defining the level one coordination responsibilities between regular and reserve forces at the Headquarters level.

Area VOTEC Support Centers have purposely been proposed at major installations where existing support in the form of training and contracting personnel is available, thus allowing maximum access to field units while at the same time reducing implementation impact. The AVSC provides interface with field units and VOTEC institutions acting as an advisory, contracting, and monitoring service agency to ensure quality contract training. Professional consideration indicates that a minimum of one qualified education specialist of a civil service rate allowing long-range program continuity should be considered. The relatively short-tour military assignment system does not promote this vital element. Other AVSC staff should be military staff available on a part- or full-time basis.

In most cases, training needs are first apparent at the school, field, or operational unit level. The heart of the VOTEC program is directed toward providing MOS qualified personnel at this level. School

and/or unit commanders, therefore, will be tasked with defining and initiating VOTEC training requests via command approval channels to the AVSC for implementation. Consideration should be given to a minimal approval chain to ensure a responsive VOTEC program. In addition, the school or unit training staff will be required to provide active assistance to the AVSC during the contract definition phase of the training project, assist in monitoring the training, and submit reports of training completed. Formal communication procedures between separate command elements involved should be minimized during this phase of the VOTEC training process to enhance accomplishment of training.

Overall, the administration of the program is straightforward, yet it requires uncluttered lines of communication to and from the AVSC where major actions to provide training occur between the school, unit, AVSC, and VOTEC institutions. A primary administrative consideration to effect a smooth running program will be the determination of the lowest appropriate command level for control and disbursement of VOTEC funds to support contractual actions associated with the VOTEC program.

CONTRACTUAL CONSIDERATIONS

The need for VOTEC type training in the field manifests itself in a variety of situations, at various locations and in numerous configurations. The basic concept of VOTEC evolved from the notion that there may be a better or more efficient method of obtaining acceptable MOS basic skill training or partial MOS certification used in conjunction with on-the-job training programs at cost ratios comparable to or less than present methods used.

It is not the intent of VOTEC training to degrade the use of formal service or interservice school systems already in existence. Rather, it is intended to supplement the existing systems with a practical approach to eliminating voids within the present system that result in day-to-day operational problems for units in the field that historically have had to function with less than the optimally trained man. For some basic skills there are no formal service schools. In other cases, operational requirements necessitate retraining within current job specialties to effectively support the assigned mission. In other instances low student throughputs in certain skill areas make service school training infeasible from the cost standpoint alone. The use of available VOTEC training from commercial sources is an answer to the problem.

The VOTEC training schema has been proven a viable procedure to obtain MOS certification in the area of basic skill training for the Marine Corps Reserve. The extension of VOTEC to the regular components of the Marine Corps via AVSCs is feasible and offers opportunity to acquire now available basic skill training to support MOS qualification when and where it is needed.

In the majority of cases contractual effort to support the VOTEC program will be case-by-case efforts based upon a matrix composed of the following elements:

1. Training conducted on station, at VOTEC institutions, or in an industrial environment

2. For complete or partial MOS qualification

3. For single or multiple courses of instruction

4. For individuals or groups of students

5. During specified time frames or in "pipelines" type of training situations

6. For basic or advanced entry level skill training

7. For annual or multiyear training endeavors

8. With regular ongoing curricula, military curricula, or variations thereof

9. With or without messing and/or billeting for students.

Contractual approach is necessarily a prerogative of the individual contracting officer. Of primary importance, regardless of the contractual vehicle used, is a legal ASPR contract. The contracting officer should be included early in the planning discussions for procurement of VOTEC training programs to ensure proper procedures are followed, particularly if sole source selection criterial are anticipated. In most cases, the appropriate contractual vehicle will be a "Negotiated Indefinite Quantity Contract" meeting ASPR 3-409 and 3-608. A "both" party signature approach to procurement of VOTEC services should be followed utilizing Standard Form 26 for the Award/Contract and DD Form 1155 as the vehicle for ordering services against the contract vice the Standard Form 33 "single" signature approach which may appear more appropriate in some instances. Furthermore, each desginated AVSC should be provided a VOTEC Guidelines package (refer to TAEG Report 22-2) to assist in conducting the program.

TRAINING SOURCE SELECTION CRITERIA

The process of selection of a source of Marine Corps skill training requires careful consideration of a number of factors.

LOCATION. The VOTEC institution should be within a relatively short distance from Marine Corps bases which have facilities for housing, messing, transportation, and administrative support of student personnel. This

would allow the busing of students for training and return to the base at the end of the day's instruction. This arrangement would have the added advantage of maintaining the student in a military environment thus reinforcing indoctrination of the trainee in an early phase of his service. It would be desirable to have the training source within approximately 25 miles of the base.

FACILITIES. A personal inspection should be made to determine the adequacy of facilities for the training desired. Frequent re-inspections may be required because of the expansion of facilities and shifts in use of these training facilities, as well as the effects of technical obsolescence in some areas. Evaluation of facilities should be objective in terms of inventory, space, and quality. It should also be determined just what facilities will be used for Marine Corps students.

PERSONNEL. The number and quality of VOTEC personnel within an institution, both administrative and instructional, should be determined. Requirements for certification of instructors and administrators should normally follow state standards as a minimum. In VOTEC skill areas, considerable background experience in industry, coupled with instructional ability, provide exceptional prerequisites for instructors.

CURRICULUM. The curriculum for MOS training should be precise and well documented and should reflect a need-to-know philosophy. Elements of a systems approach are desirable, to include task analysis and the establishment of specific training and behavioral objectives. Subject matter should be designed to reflect consideration of entry level and practical application of terminal objectives. Revision and updating procedures should be well established, consistent with the technological changes involved.

INSTRUCTIONAL TECHNIQUES. The selection of instructional techniques, in terms of probable success, will vary with the training concerned; however, factors to be considered include:

1. Maximum "hands on" instruction
2. A full range of appropriate training aids
3. Use of self-paced individualized instruction
4. An instructional "mix" appropriate to the subject
5. Maximum use of instructional media.

INSPECTION TEAMS. Institutions under consideration for training participation should be inspected by administrative, instructional, and subject matter specialists from the host AVSC. These teams should insure that facilities and instruction are of a high order, and that training objectives can be met.

CERTIFICATES AND ACADEMIC CREDITS. Analysis should be made to determine the school policy in regard to award of certificates of completion and transferable credits to the students. Such awards tend to strengthen course status and provide increased incentive for Marine Corps students.

TRAINING CERTIFICATION

It is essential that, having selected a source of skill training, the instruction provided will result in the production of an individual fully capable of performing work activities required by his assignment. Furthermore, this work must be accomplished to a degree of excellence compatible with the requirements of the MOS. It is necessary, therefore, that standards be established as a basis for certification. These standards will encompass definitization of the elements of instruction considered essential, plus intermediate and terminal performance criteria.

The practice of arranging for instruction and training based upon vague and generalized course titles, such as automotive mechanic or electrician, may be acceptable in circumstances where the student is preparing for occupational qualification for a broad field of job openings. However, in the case of Marine Corps training, the needs are quite specific, although they may encompass a considerable range of activities depending upon the Marine's assignment. Therefore, the principles of "need-to-know" and course compression are best served by the establishment of specific behavioral objectives as the basis for course structure.

Logically, the best source of standards for course certification are the subject matter specialists of the Marine Corps school concerned with the training in each skill area, or if there is no Marine Corps school, those service personnel best technically qualified in the field. The process will require consultation and the writing of specifications prior to contracting of training, observation and revision of instruction during the training, and the certification of performance objectives at completion of training. It will be a continuing process, requiring post-assignment evaluation feedback and subsequent revision as required.

The evaluation of the effectiveness of training is the measure of how well the trainee performs on the job for which he has been trained. The training program is judged effective if the trainee carries out his job proficiently; if he does not, the program must be examined to determine what job tasks are not being adequately taught.

This procedure requires some method of determining trainee effectiveness on the job, with consideration of the relative importance of various elements of the various tasks. A distinction must be made to identify undertraining in important tasks, and overtraining in tasks of lesser importance.[1]

Technical training effectiveness can also be inferred by such measures as how many hours of instruction have been given, the use of various instructional equipment, how many dollars are spent per student, end-of-course questionnaires and examinations. However, these factors have little meaning if the basic goal, on-the-job performance, is not met.

Training specialists, who are concerned with cost effectiveness, recognize that trainee evaluation must not be confused with course evaluation. It is quite possible for a trainee to achieve a completely satisfactory understanding of course objectives, but remain incompetent in job performance. Such a situation indicates the lack of consistency that can exist between course objectives and job performance objectives. Realignment of the training course is required in such cases.

The evaluation of training output is essentially the end result of a process which begins with the course design, based upon determination of specific behavioral objectives, with progress tests and work projects evolved from observation of typical job performance by experienced workers. Testing of the trainee's progress is carried out at each phase of training, with final examinations, written and practical, and instructors' evaluations.

A certificate of satisfactory course completion must be submitted by the source in such a form as to reflect the accomplishment of the course objectives. This certification will insure compliance with contractual requirements, and the Marine Corps Program of Instruction.

[1] The subject of determining trainee effectiveness on the job is addressed in TAEG Report 19, A Method for Obtaining Post-Formal Training Feedback: Development and Validation.

SELECTED MARINE CORPS SKILL ANALYSIS

Initial review of Marine Corps MOSs submitted by Marine Corps Headquarters for analysis by TAEG (refer to table 6) revealed that many were related in basic skills, but differed principally in experience level. It was decided to identify those MOSs whose duties and training requirements could be best determined, and which appeared the most likely candidates for training being conducted by commercial sources. Thirty-one Marine Corps skills from the proposed list were selected, and charts were prepared describing the characteristics of the related MOSs (see appendix E).

In the subsequent analysis of VOTEC survey findings (appendix C), additional skills were considered, on the premise that they appeared to have elements related to civilian training. These included such training as radio-TV repair, accounting, machinist, diesel mechanic, watchmaker, food service, clerical, secretarial, and barbering.

Consideration of alternative commercial sources led to the conclusion that industry sources and private trade/vocational institutions are considerably higher in cost than public VOTEC schools. This assessment is offset to some degree by the flexibility of private schools in responding to specific Marine Corps needs on short notice. This was demonstrated in the case of the South Bay Trade School, San Diego, California, which provided automotive repair training for Marine Corps reservists through contract at approximately $6.00 per student hour. Public VOTEC institutions, on the other hand, averaged less than $1.50 per student hour. However, any contract relating to basic skills must consider both cost and training effectiveness.

Certain training was difficult to locate in VOTEC institutions or is provided with only a marginal relevance to Marine Corps training requirements. Also, most officer and senior NCO MOSs usually reflect supervisory or management duties not requiring the basic skill training considered in this study. Some officer/NCO positions, however, might benefit from survey courses providing broad overviews in certain skill areas, such as printing or data processing.

Within the VOTEC environment, the most logical candidates among the civilian-related skills are those of low density--relatively low output. The small numbers of students involved would allow easy integration, in many cases, into existing VOTEC programs, with minimum disruption of the normal student flow. Low volume would result in increased opportunities for training at low cost since the training could be provided by VOTEC institutions from ongoing programs.

Table 6 provides an evaluation of the VOTEC capability in the various Marine Corps skills assigned to TAEG for analysis. Explanation of the four ratings is as follows:

TABLE 6. RATING OF MARINE CORPS SKILLS FOR VOTEC TRAINING

MOS	LIST OF MOS'S PROPOSED FOR ANALYSIS BY TAEG	VOTEC TRAINING CAPABILITY				REMARKS
		CURRENTLY OFFERED	READILY ADAPTABLE	NOT READILY ADAPTABLE	UNSUITABLE	
0441	Logistics Man			X		Predominantly MARCOR specific requirements
1121	Plumbing and Water Supplyman		X			Basic skills taught-MARCOR GFE required
1122	Well Driller		X			Training not offered in vicinity of MARCOR Base
1141	Electrician	X				
1142	Electrical Equipment Repairman	X				Limited GFE required
1161	Refrigeration Mechanic		X			Basic skills taught-MARCOR GFE required for complete MOS qualification
1171	Hygiene Equipment Operator			X		Course development and GFE required
1173	Hygiene Equipment Repairman			X		Course development and GFE required
1316	Metal Worker	X				
1341	Engineer Equipment Mechanic		X			Training not offered in vicinity of MARCOR Base
1345	Engineer Equipment Operator		X			Training not offered in vicinity of MARCOR Base
1371	Combat Engineer				X	Demolition/combat aspects preclude consideration

TABLE 6. RATING OF MARINE CORPS SKILLS FOR VOTEC TRAINING (continued)

MOS	LIST OF MOS'S PROPOSED FOR ANALYSIS BY TAEG	VOTEC TRAINING CAPABILITY				REMARKS
		CURRENTLY OFFERED	READILY ADAPTABLE	NOT READILY ADAPTABLE	UNSUITABLE	
1400	Basic Drafting, Surveying and Mapping Man	X				
1401	Basic Mapping Officer			X		Not within basic skills criteria
1402	Mapping Officer			X		Not within basic skills criteria
1411	Construction Draftsman	X				
1421	Surveyor	X				
1422	Surveying and Drafting Chief				X	Not within basic skills criteria
1431	Map Compiler		X			Training not offered in vicinity of MARCOR Base
1432	Cartographer		X			Training not offered in vicinity of MARCOR Base
1453	Mapping Chief				X	Not within basic skills criteria
1500	Basic Printing and Reproduction Man	X				
1501	Basic Printing and Reproduction Officer			X		Not within basic skills criteria-Survey course could be developed

TABLE 6. RATING OF MARINE CORPS SKILLS FOR VOTEC TRAINING (continued)

MOS	LIST OF MOS'S PROPOSED FOR ANALYSIS BY TAEG	VOTEC TRAINING CAPABILITY				REMARKS
		CURRENTLY OFFERED	READILY ADAPTABLE	NOT READILY ADAPTABLE	UNSUITABLE	
1502	Reproduction Officer			X		Not within basic skills criteria - survey course could be developed
1521	Duplicating Man	X				Some excellent VOTEC facilities
1522	Offset Pressman	X				Some excellent VOTEC facilities
1531	Plated Layout Man	X				Some excellent VOTEC facilities
1532	Process Cameraman	X				Some excellent VOTEC facilities
1541	Reproduction Chief				X	Not within basic skills criteria
1542	Reproduction Equipment Repairman	X				
2511	Wireman			X		Only from industry sources
2800	Basic Telecommunicat on Maintenance Man			X		Industry source and GFE required
3200	Basic Repairman			X		Some skill elements available - low level training
3201	Basic Repairman Officer				X	Not within basic skills criteria

TABLE 6. RATING OF MARINE CORPS SKILLS FOR VOTEC TRAINING (continued)

MOS	LIST OF MOS'S PROPOSED FOR ANALYSIS BY TAEG	VOTEC TRAINING CAPABILITY				REMARKS
		CURRENTLY OFFERED	READILY ADAPTABLE	NOT READILY ADAPTABLE	UNSUITABLE	
3202	Repair Services Officer				X	Not within basic skills criteria
3211	Fabric Repairman			X		Training not offered in vicinity of MARCOR Base
3212	Fabric Repairman Chief				X	Not within basic skill criteria
3241	Office Machine Repairman	X				
3242	Office Machine Repair Chief				X	Not within basic skill criteria
3253	Repair Chief				X	Not within basic skill criteria
3310	Bakery Officer				X	Not within basic skill criteria
3513	Body Repairman	X				Numerous VOTEC facilities
3516	Automotive Mechanic	X				Numerous VOTEC facilities
3518	Fuel and Electric Systems Repairman	X				Numerous VOTEC facilities
3519	Motor Transport Chief				X	Not within basic skills criteria
3531	Motor Vehicle Operator		X			Training not offered in vicinity of MARCOR Base

TABLE 6. RATING OF MARINE CORPS SKILLS FOR VOTEC TRAINING (continued)

MOS	LIST OF MOS'S PROPOSED FOR ANALYSIS BY TAEG	VOTEC TRAINING CAPABILITY				REMARKS
		CURRENTLY OFFERED	READILY ADAPTABLE	NOT READILY ADAPTABLE	UNSUITABLE	
3533	Tractor Trailer Operator		X			Training not offered in vicinity of MARCOR Base
3537	Truckmaster				X	Not within basic skill criteria
4002	Data Systems Automation Officer			X		Advanced training at Quantico
4006	Data Automation Operations Officer			X		Advanced training at Quantico
4010	Digital Computer Systems Software Officer			X		Advanced training at Quantico
4013	Card Punch Operator	X				Short term training-widely available
4015	Off-line Equipment Operator	X				
4019	Data Systems Librarian	X				
4033	Computer Operator IBM S/360	X				
4034	Master Computer Operator IBM S/360				X	Not within basic skills criteria
4059	Programmer, Optical Character Recognition System	X				

TABLE 6. RATING OF MARINE CORPS SKILLS FOR VOTEC TRAINING (continued)

MOS	LIST OF MOS'S PROPOSED FOR ANALYSIS BY TAEG	VOTEC TRAINING CAPABILITY				REMARKS
		CURRENTLY OFFERED	READILY ADAPTABLE	NOT READILY ADAPTABLE	UNSUITABLE	
4063	Programmer, COBOL IBM S/360	X				
4065	Programmer, ALC IBM S/360	X				
4069	Systems Programmer, IBM S/360	X				
4093	Data Systems Operations Chief				X	Not within basic skills criteria
4095	Data Systems Programming Chief				X	Not within basic skills criteria
	Programmer, Burroughs 3500			X		No training in this equipment in vicinity of MARCOR Base
	Computer Operator, Burroughs 3500			X		No training in this equipment in vicinity of MARCOR Base
4423	Legal Services Reporter - GCM (Closed Microphone)		X			MARCOR elements required - stenotype available/ recommended
4911	Illustrator	X				
4941	Audiovisual Equipment Technician		X			Limited to community/junior colleges

1. Currently Offered: this training is very similar to Marine Corps requirements and could be provided with little or no modification of existing curricula.

2. Readily Adaptable: indicates that current course offerings offer some or all of the basic skills and theory, but that some modification, supplementary data, or GFE is required to meet Marine Corps needs. In some cases, this rating indicates that the training is offered, but at locations not in the vicinity of Marine Corps training bases.

3. Not Readily Adaptable: indicates that the training is not currently offered at VOTEC institutions, although the capability may exist for development. Also, the training needed may be based upon purely Marine Corps procedures and directives, may require much GFE, and/or may be at a skill level inappropriate to the basic skill criteria considered in the TAEG study; e.g., officer or NCO training, although survey courses could possibly be developed.

4. Unsuitable: indicates that VOTEC training for the skill should not be considered. This category excludes the training of officers and NCOs to positions which are achieved through rank and experience, and for whom the basic skills considered by TAEG are inappropriate. Other MOSs require training which is not found in civilian VOTEC institutions; e.g., demolition, combat training, and mine warfare.

Appendix C provides charts reflecting the survey of VOTEC institutions and lists the training offerings considered to be related to Marine Corps requirements.

COMPARATIVE TRAINING CAPABILITY ANALYSIS

As previously discussed, public VOTEC training institutions are the most cost and training effective commercial sources for training Marine Corps personnel in selected basic skills. There are, of course, differences in the total training capability of these institutions. Furthermore, there is often more than one public institution in the geographical areas included in this study which could possibly satisfy some or all of the Marine Corps' desired skill training requirements. When a program is established to procure skill training from a public VOTEC institution, these issues will most normally be resolved through competitive procurement procedures. This course of action is necessary because:

1. Armed Service Procurement Regulations dictate this action,

2. It is difficult to justify a sole source procurement,

3. For a specific geographical area it is more efficient, if the capability exists, to administer a VOTEC program with one institution than with many institutions.

Phase I study findings indicated the need to establish criteria to permit evaluation and comparison of the training capability of individual public VOTEC training institutions. Criteria established for this purpose are presented in table 7. It is emphasized that the criteria and relative weights assigned could vary slightly dependent on specific training requirements; however, this should be the exception.

Table 7 is intended to be used as a selection form in rating VOTEC programs in various localities. The survey forms provided in Part II of this report are to be used in determining the general training capability of VOTEC institutions and may be used to complement the results provided by table 7. The evaluation criteria are based on the data included in the survey forms and could be used to evaluate industrial organizations and private training institutions.

Accreditation, except in extenuating circumstances, is considered a prerequisite for any commercial source providing Marine Corp skill training. Since only those institutions having accreditation will be considered in Marine Corps skill training procurements, it is not necessary to include accreditation as a training evaluation criteria in source selection.

Each of the evaluation criteria shown in table 7 is assigned a maximum score, the magnitude of which reflects the relative importance of the specific criterion. Using this scoring system, an institution must receive a minimum total score of 150, out of the possible 200, to be qualified to conduct training for the Marine Corps. With the exception of the designated critical criteria, it is not mandatory that each evaluation criterion receive the minimum acceptable score specified in table 7 for the institution to be acceptable; however, the <u>total score</u> must be at least 150.

The training capability evaluation system presented in table 7 is straightforward and requires no explanation with the exception of three criteria. These criteria are distance from military base, square feet per student, and GFE required. In evaluating distance from military base, the institution closest to the base should receive the highest score. A distance of 25 miles is considered average and 50 miles (approximately an hour's drive) is the maximum distance permissible.

The criteria for square feet per student will depend on the specific training required. Standards have been established which set forth the recommended student area for various types of training situations. These standards should be referred to in evaluating the criteria for square feet per student. DoD Military Standard 1379A specifies 36 square feet/student for a general classroom and 75 square feet/student for laboratory or shop areas.

TABLE 7. REPRESENTATIVE VOTEC TRAINING CAPABILITY EVALUATION CRITERIA

	FACILITIES	*DISTANCE FROM MILITARY BASE	CAFETERIA	SQUARE FEET PER STUDENT	MEMBERS REQUIRED COURSES OFFERED	*CURRICULUM	INSTRUCTIONAL TECHNIQUE	*COURSE LENGTH	*INSTRUCTOR QUALIFICATIONS	STUDENT/ INSTRUCTOR RATIO	GFE REQUIRED (S)	*COST PER STUDENT INSTRUCTION HOUR ($)	TOTAL
MAXIMUM SCORE	15	15	15	10	15	20	20	20	20	10	20	20	200
ACCEPTABLE SCORE	11	11	11	8	11	15	15	15	15	8	15	15	150
INSTITUTION:													
1.													
2.													
3.													
4.													
5.													
6.													
7.													
8.													
9.													
10.													
11.													

*Denotes critical area. Acceptable score must be achieved for institution to be qualified to conduct training.

Government Furnished Equipment is an important evaluation criteria because it impacts directly on the total cost of the training program. For this reason, GFE is evaluated in terms of dollars instead of quantity. It should be recognized that the critical criteria of cost per student instruction hour does not include GFE costs. It is, however, included in the determination of the total cost of the training program(s).

Commercial contract training programs cannot be effectively established unless specific selection procedures are employed. The success of this selection process is dependent upon the nature of the specific training requirements under consideration, the validity of the evaluation criteria relative to the training requirements, and the thoroughness of applying these evaluation criteria to the institution selection process. The criteria presented in table 7 are applicable to most skill training programs; however, modification is recommended if considered necessary to reflect special training requirements.

SECTION IV

PROPOSED CONTRACT TRAINING IMPLEMENTATION PLAN

PURPOSE

This section is concerned with providing information for the development of implementation guidelines for the VOTEC training program. A management structure capable of supporting VOTEC will be defined, resources required will be identified, and resources known to exist will be indicated. Finally, actions required prior to implementation of VOTEC by the Marine Corps will be identified.

SYSTEM STRUCTURE

The proposed VOTEC program parallels the present military management system providing centralized management at Headquarters Marine Corps. Functional mid-level management will be located at major Marine Corps bases and air stations in CONUS and Hawaii. Co-located at these selected sites will be AVSCs providing assistance and support to units requiring VOTEC training in order to qualify enlisted Marines for MOSs. The three major branches; i.e., Ground, Air, and Reserve, each will have representation and responsibility for one or more center(s).

Headquarters Marine Corps should be responsible for policy and funding to support regular component ground forces. In like manner, it should be responsible for regular component air forces and for all reserve participation, both ground and air. Appendix G, the proposed Marine Corps Order, further clarifies the role of each branch involved. Since three relatively separate command channels are involved, coordination of the VOTEC effort in the form of a program manager or coordinator should be appointed to provide VOTEC training system continuity. The logical choice from the standpoint of providing operational readiness for the Corps is Code MC-MT.

Commanding Generals and Commanding Officers of designated Marine Corps bases and air stations will provide management functions associated with the AVSC under their jurisdiction. Tasking should include provisions for personnel to staff the VOTEC effort, facility space with equipment allowance, and authority for use of other staff functions in the support effort. For example, VOTEC training support funds provided by Headquarters Marine Corps would be received and disbursed via the Comptroller's office, and the issuing of contracts to commercial sources of training will require participation by legal and contracting departments. Perhaps the most significant impact, however, may be the assignment as a primary duty function of a qualified training officer or civilian education specialist to supervise the field program. It is noted that the Headquarters staff of the 4th Marine Division (G-3) has successfully managed a VOTEC program for the past two years and can provide insights not included in this report.

The concept of the AVSC evolved from the need to identify a core of training professionals at strategic locations capable of administering commercial contract training services. It is not a difficult process but it is a unique approach and requires in-depth indoctrination as well as skills and knowledges the average training officer may not have experienced. The AVSC can appropriately be viewed as an extended staff function requiring an administrative core on a full-time basis with the authority to task existing staff specialists on a part-time basis during the contracting for training.

Marine Corps units or commands identifying need for and requesting VOTEC training should become an integral part of the training process. Upon approval of the training request, liaison with the AVSC must be established and maintained for the duration of the training. Assistance to the AVSC is required to accurately define the training to be contracted, the time frame during which it will occur and the parameters of support to the individual(s) receiving training. Questions relating to messing, billeting, transportation, and regular duties to be performed must be mutually resolved by the requesting command and the AVSC. Actual contract training must be monitored and administrative reporting completed. Reference to the Marine Corps Order (appendix G), the general specification for VOTEC training, and the VOTEC implementation guidelines package (TAEG Report 22-2) will assist in defining the necessary requirements.

RESOURCES REQUIRED

The resource requirement falls into three categories of personnel, publications, and funding for implementation of the VOTEC program.

1. Personnel. The following personnel manning requirements are provided as guidelines during the implementation phase of VOTEC.

a. It is projected that three project officers (i.e., one each representing ground, air, and reserve forces) will be required for approximately two months at the Headquarters Marine Corps level prior to implementation of VOTEC. Their duties would be to coordinate individual branch efforts of implementation and serve as a policy board providing a single set of compatible guidelines for administration of the VOTEC program.

b. Personnel requirements for bases and air stations having AVSCs include one supervisor (O-4, O-5) on a part-time basis, one VOTEC training officer (O-2, O-3) on a part- or full-time basis, one training support chief (E-8, E-9) or education specialist (GS-9, GS-11) on a part- or full-time basis, and one administrative clerk (E-6) on a full-time basis. As noted in other sections of this report, part-time support will be required from Comptroller and Contracting personnel during the processing of contracts for training.

2. Publications. A Marine Corps Order will be required to implement the VOTEC program. Procedural doctrines governing the administration of the VOTEC program may require development and publication in order to define branch-peculiar (i.e., Ground, Air, or Reserve) procedures. Guidelines for AVSC operation are required to standardize the VOTEC training process. A VOTEC training specification is a requirement of the contractual procedure by which training will be obtained.

3. Funding. Funding to support the VOTEC training program requires identification and transfer to base and air station Comptrollers to be available for use by units and commands requesting such training. This area will be a primary concern of project officers identified in paragraph 1a above.

RESOURCES AVAILABLE

The VOTEC program was designed to overlay the present Marine Corps military management system thereby minimizing impact factors. Area VOTEC Support Centers were proposed only at major installations having training, comptroller, and contracting staffs in existence. Since these key personnel are available at major installations, relatively few new personnel will be required although reassessment of priority of functions and reassignment of personnel will be required. An assessment of actual billet strength versus predicted work load should be conducted at proposed locations of AVSCs prior to final determination of number of new personnel required to support the VOTEC program.

A draft of a Marine Corps Order for Commercial Contract Training has been provided for staffing by Headquarters Marine Corps in appendix G. An implementation package that includes guidelines for contracting VOTEC training by AVSCs, a Navy/Marine Corps specification for VOTEC training, and other data are contained in TAEG Report 22-2.

The identification of funding sources was not included within the scope of this report. It is the conviction of the investigators that the following reasons justify the costs needed for VOTEC training:

1. The VOTEC approach to MOS qualification training is far less costly than training provided by low density student flow service schools.

2. VOTEC training is an economical approach to required MOS qualification training not being accomplished.

3. The VOTEC program provides a method for Marine units to upgrade Operational Readiness posture by providing a means to more efficiently MOS qualify assigned personnel.

ACTIONS REQUIRED TO IMPLEMENT

The following actions are required to implement the VOTEC program:

1. Review data provided by TAEG Report 13-1,

2. Survey current and projected VOTEC training requirements,

3. Prepare an implementation plan,

4. Refine this implementation plan:

   a. Develop a Plan of Action to include the following:

      (1) Refine and coordinate the Marine Corps Order,

      (2) Develop and coordinate branch policies (Ground, Air, and Reserve),

      (3) Confirm personnel, facility and equipment requirements by individual base or air station,

      (4) Identify funding required and sources available,

      (5) Refine "SC implementation package.

   b. Make and issue decision to implement.

   c. Initiate implementation plan by:

      (1) Assigning or hiring personnel required,

      (2) Providing facilities and equipment if required,

      (3) Publishing and distributing MCO, branch policies and AVSC implementation packages,

      (4) Providing funds for contractual efforts to base/air station Comptrollers,

5. Manage program.

SECTION V

SUMMARY OF STUDY FINDINGS AND CONCLUSIONS

This section of the report presents a summary of the major study findings and conclusions. These findings and conclusions are the foundation upon which the "Proposed Contract Training Implementation Plan," presented in the preceding section, and the "Recommendations," presented in the following section, are based. The major issues presented in section III are addressed relevant to their impact upon the utility of commercial contract training for selected Marine Corps skill training. The discussion which follows emphasizes the basic conclusion of this study--that commercial training is a viable means of supplementing the Marine Corps' vast training system. It is not intended to, nor could it, replace presently conducted Marine Corps skill training programs. The concept can, however, be used in appropriate situations to supplement active duty and reserve training and for mobilization. These situations are included in the discussions which follow.

1. The DoD's philosophy and attitude toward training have changed appreciably in recent years. Indicative of these changes are the many dynamic training and training-related issues being explored (including the concept set forth in this study) by all branches of the Armed Forces. Such progressive endeavors can favorably impact upon many major issues of common concern to the Armed Forces and should be supported and promoted at the highest levels of DoD management. New training concepts should be subjected to critical, but objective review, and if feasibility is demonstrated, immediate action taken to implement the concept.

2. Of the three alternatives examined during this study, public VOTEC training is, in terms of total effectiveness and utility to the Marine Corps, the best commercial source for Marine Corps skill training. Such institutions offer cost-effective, accredited quality training for many Marine Corps occupational skills. They are located in all of the geographical areas included in this study; they will tailor training programs to meet specific Marine Corps requirements; and they are receptive to training Marine Corps personnel. Public VOTEC training institutions may be effectively used to support Marine Corps training in the following situations:

Active Duty (Peace Time)

- Low Density Core Skills (Marine Corps only)
- Low Density Core Skills (Interservice - Marine Corps Responsibility)

Active Duty (Mobilization)

- High Density Core Skills
- Low Density Core Skills
- Low Density Special Skills

Marine Corps Reserve

- Weekend Training Core Skills
- Active Duty Training Core Skills

3. The VOTEC training concept supported by this study involves numerous interrelated considerations which impact upon the management, administration, and success of newly established programs. These considerations include:

- Marine Corps/civilian community relations
- Interservice training objectives
- VOTEC institutions can meet Marine Corps terminal objectives
- VOTEC institutions have extensive training capability
- Individual VOTEC institutions can provide low volume pipeline training
- VOTEC institutions can meet ASPR regulations and Marine Corps specifications
- Should maintain student in Marine Corps environment in proximity of VOTEC institution
- VOTEC programs are cost effective
- VOTEC institutions can meet Marine Corps peak loading and mobilization requirements
- VOTEC institutions provide accredited training

4. Basic skills common to the Marine Corps and to the civilian sector are most suitable for VOTEC training. Marine Corps MOS skills which have certain tasks or equipment unique to the Marine Corps, but are otherwise similar to counterpart civilian skills, may also be trained in VOTEC institutions. Skills that require a high percentage of Marine Corps unique training and equipment and have no like counterpart civilian

skills are not realistic candidates for VOTEC training. Furthermore, MOSs designated for officers and senior NCOs normally require supervisory and/or management training and are not considered suitable for VOTEC training. From an economic viewpoint, MOS skills having low student input requirements are the most likely candidates to result in significant cost savings through VOTEC training. This study indicates that public VOTEC institutions offer training in many occupational areas comparable to Marine Corps skills (i.e., baker, cook, auditing technician, accounting clerk, bookkeeper, basic military police and corrections man, and more) which were not included in this study. Such basic skills should be considered for public VOTEC institution training.

5. Public VOTEC institutions presently offer training programs, which require little or no revision to existing curricula, for 37 percent of the 67 MOS skills included in this study. Training could be provided by VOTEC institutions for an additional 17 percent of the MOS skills with only minor revision to existing curricula and for an additional 24 percent if major revisions to existing curricula were made. The study, therefore, indicates that approximately 78 percent of the total number of MOSs analyzed could be trained in public VOTEC institutions and that 22 percent are not suitable for VOTEC training. Public VOTEC institutions could readily accommodate the training requirements of 54 percent of the MOSs included in this study with little or no revision to existing curricula of VOTEC institutions.

6. Public VOTEC institutions may be utilized to effectively support the MOS qualification and refresher training requirements of individual Marine Corps Reserve Units. Private training institutions and nondefense industrial organizations could be used to support reserve training in those instances where public institutions are not available; however, the training costs would be significantly increased over those of public institutions.

7. Public VOTEC institutions, private training institutions, and nondefense-oriented industrial organizations are excellent sources for training in time of mobilization. Collectively, these sources represent a powerful training capability which should appropriately be reflected in mobilization plans. Benefits to be realized by using these sources during mobilization include:

a. Significantly reducing the training load imposed upon MOS qualification schools,

b. Freeing combat ready personnel for action,

c. Increasing Marine Corps capability to respond to an emergency.

8. From an economic standpoint, it was not possible to compare the training effectiveness and efficiency of military versus nonmilitary programs during this study. Therefore, an estimate of the absolute magnitude of cost savings was not attempted. Any realistic estimate of potential cost savings would require the development of specific training specifications for each skill and the identification of specific institutions where the training is to be accomplished. Such effort was beyond the scope of this study. Until specific proposals, including constraints, are presented to these institutions, it is meaningless to attempt to determine the specific costs involved in undertaking and operating a military training program in a civilian institution. It was possible, however, to make certain economic based conclusions. These are summarized below.

a. Skill areas where enrollment is relatively low appear to offer the greatest potential for improvement in efficiency.

b. Because of low enrollments, nearly all journeyman courses were relatively expensive to the Marine Corps. The low enrollment of these courses and their rather technical requirements make them ideal candidates for training in nonmilitary programs. A final determination, however, must be based on an examination of each course's requirements and the nonmilitary capability.

c. Any long term contracts which are negotiated with civilian institutions will have to be done by guaranteeing that, if and when expansion is required to satisfy the local demand for training, the Marine Corps will have to assume the fully allocated costs of its own training, including any expansion which may be necessary.

d. The short term use of civilian institutions is a substantially different situation than the long term use. Most civilian institution administrators are eager to have their facilities used to capacity and indicated the cost of military participation would be inexpensive.

e. Many opportunities to utilize civilian institutions for military training are available. If the military will adopt a management policy (refer to the Proposed Marine Corps Order, appendix G) which will emphasize and promote flexibility at the operational level, there is considerable evidence to indicate that a good deal of Marine Corps training can be acquired from civilian institutions at nominal costs. This flexibility requires that contract procedures, specifications, implementation authority and procedures, as set forth in section IV and Part II of this report, be readily available which will facilitate operational decisions to utilize these civilian institutions as the need and opportunity arise.

f. The majority of civilian vocational institutions receive heavy public support which is the reason tuition and fees charged their students do not nearly cover all their costs. For the military to participate in these programs on a long-term basis at charges commensurate with costs levied on the civilian students, it will be necessary that these schools continue to receive their subsidies in analogous proportion to that currently received. If military participation in civilian training programs is limited to long-term commitments and includes high throughput, then the military will likely have to pay charges equivalent to the true long-term costs. The extent to which these charges differ from true long-term military costs determines the economic feasibility of undertaking a civilian program.

9. The ASPR sets forth appropriate contractual procedures for establishing VOTEC training programs. In most VOTEC programs, the appropriate contractual vehicle will be the "Negotiated Indefinite Quantity Contract" which meets ASPR Sections 3-409 and 3-608. The "both" party signature approach using Standard Form 26 for contract award and DD Form 1155 to order training services is preferred over the Standard Form 33 "single" signature approach.

10. The success of individual VOTEC programs is heavily dependent upon such contractually related issues as source selection, comparative training capability evaluation, and training certification procedures. Source selection criteria will normally be the same for most skill training programs and will include location, facilities, personnel, curriculum, instructional techniques, and proximity to Marine Corps bases. Furthermore, institutions under consideration for Marine Corps training programs and those under contract should be inspected by cognizant administrative, instructional, and subject matter specialists. Standard, comparative evaluation criteria, appropriately weighted to reflect relative importance, are required in all competitive VOTEC procurements. Such criteria should be similar to the initial source selection criteria previously discussed, and should include critical criteria that reflect the specific training requirement(s) under consideration. All VOTEC programs must include standards as a basis for certification. These standards should include definitization of the elements of instruction considered essential plus intermediate and terminal performance criteria. The best sources of standards for course certification are Marine Corps subject matter specialists. To insure compliance with contractual objectives, all training institutions should submit a certificate of satisfactory course completion to the cognizant procuring activity.

11. The administration of Marine Corps VOTEC programs should be performed through a four-tier level structure. Administrative control should flow from Marine Corps Headquarters (management and funding) to designated major commands (implementation management), to AVSCs (user

services) to the level four field commands. Dual budget and funding channels for the regular and reserve forces will be required for efficient administration of VOTEC within the Marine Corps. The efficiency and effectiveness of VOTEC programs will be substantially improved by minimizing required approval levels. Additional staffing required, if any, to administer Marine Corps VOTEC programs is undetermined; however, a minimum of one civil service education specialist is essential to promote program continuity.

12. An effective centralized management system is the key to a successful Marine Corps-wide VOTEC program. Policy and annual funding and budgeting responsibility should be centralized at Headquarters Marine Corps for regular and reserve components. A single code should act as program coordinator. Functional management of AVSCs should be under the cognizance of commanding officers of Marine Corps bases and other major installations having necessary resources.

13. Area VOTEC Support Centers should be established at major Marine Corps bases where training and contract personnel are available to support VOTEC programs. These support centers will function as an advisory, contracting, and monitoring service agency to insure quality contract training and will provide interface with Marine Corps active and reserve units and VOTEC institutions. Specific functions of the AVSCs are presented in Part II of this report.

14. Marine Corps VOTEC training programs should be implemented in accordance with the management and administrative structures proposed in this report (refer to section IV). Implementation of the VOTEC concept should include the establishment of tasking agreements with commanders of bases designated as AVSC locations. These tasking agreements should include provisions for personnel to staff the VOTEC effort, facility space with equipment allowance, and authority for use of other staff functions in the support effort. The three major branches, Ground, Air, and Reserve, each will have representation and responsibility for one or more center(s). The proposed Marine Corps Order, included as appendix G, should be used in conjunction with Part II, "VOTEC Implementation Guidelines Package," for initial implementation of the VOTEC concept. Three project officers, representing Ground, Air, and Reserve forces, will be required for approximately two months at the Headquarters, Marine Corps to implement the concept.

15. Personnel requirements for bases and air stations having AVSCs include one supervisor (O-4, O-5) on a part-time basis, one VOTEC training officer (O-2, O-3) on a part- or full-time basis, one training support chief (E-8, E-9) or education specialist (GS-9, GS-11) on a part- or full-time basis, and one administrative clerk (E-6) on a full-time basis.

16. The proposed Marine Corps Order for VOTEC training, included as appendix G, has been coordinated with cognizant procuring contracting officers, Marine Corps schools, and VOTEC institutions. It is essential that this Order, or a similar version thereof, be issued if the VOTEC concept is to be a viable Marine Corps training resource which meets the potential this study indicates.

17. A comprehensive portfolio should be prepared which identifies the training capabilities of all public and private VOTEC institutions and major industrial organizations within the CONUS. This portfolio will be of considerable benefit to the proposed VOTEC concept set forth in this study and should be included in Marine Corps mobilization plans.

18. VOTEC institutions considered for active duty and Reserve Marine Corps training should normally be limited to those institutions within a 25-mile radius of the Marine Corps installation. The cost effectiveness of the concept decreases and administrative problems increase rapidly as this limit is exceeded.

19. Public VOTEC institutions suitable for basic Marine Corps skill training are not available for Marine Corps bases located outside the 50 states. Training for personnel in the Pacific theater could possibly be obtained at VOTEC institutions located in Hawaii (refer to appendix C) if provisions for TAD en route to duty station could be accommodated.

20. Personnel assigned to Marine Corps installations outside the CONUS often perform in jobs other than their assigned MOS. Such manpower utilization, often dictated by personnel shortages, is nevertheless an inefficient use of manpower skills and training and has a detrimental effect on assignees' motivation and morale affecting reenlistment. This issue should be the subject of future detailed study.

SECTION VI

RECOMMENDATIONS

This section presents the final recommendations concerning the utilization of commercial sources, under contract, to provide selected basic skill training for enlisted personnel of the Marine Corps. The recommendations have the goal of providing effective beneficial changes to the Marine Corps training in certain VOTEC skills that are common to both the civilian and military community.

The education and training problems facing the Marine Corps are smaller in scope than those of the other services, but are no less complicated. Early in this study, it became apparent to the team that there was no single command or office that had overall responsibility for Marine Corps education and training. At Headquarters Marine Corps level there are two major elements for training; i.e., Deputy Chief of Staff for Aviation and Director Training and Education. However, this is compounded by various offices within the headquarters that have responsibility for other aspects of training. This situation is compounded down the chain-of-command to where staffing becomes complex and time consuming. The vital role of education and training in the Marine Corps and the large amount of resources devoted to it demand careful and detailed management. This problem has been recognized in the other services by the establishment of separate education and training commands immediately subordinate to the service headquarters.

Recognizing that the TAEG team would be remiss not to point out management considerations, the recommendations address both commercial contract training and observations on Marine Corps training management.

COMMERCIAL CONTRACT TRAINING

1. The Commandant of the Marine Corps should adopt the VOTEC concept for selected basic skill training for both the regular and reserve components of the Marine Corps.

2. The Marine Corps should place emphasis on public institutions as the major source of VOTEC training for selected basic skills.

3. The VOTEC training during peacetime should be limited to low volume pipeline training by individual VOTEC institutions.

4. The CMC should consider public and private VOTEC institutions as a major adjunct for basic skill training in the planning and implementation of mobilization.

5. The Marine Corps VOTEC program should be centrally managed. The management of the VOTEC program should be concerned with policy, planning, programs, and budgeting.

6. The CMC should establish AVSCs at each major training installation of the Marine Corps. The AVSCs should be established as an adjunct to the existing G-3 Sections of major CONUS and Hawaii Marine Corps Training Centers.

7. The AVSCs should be staffed by present on board military officers at the O4 and O5 level. The addition of one civilian education specialist (GS-1710-9/11) and one administrative clerk (E-6) should be considered for the implementation of the VOTEC program.

8. The Marine Corps should maintain and keep current a comprehensive portfolio on capabilities of commercial contract training sources; this VOTEC information should be used for the selection of commercial training sources for peacetime training and mobilization planning. The responsibility for gathering VOTEC information should be assigned to AVSCs for specific geographic areas.

9. The VOTEC training for peacetime active duty and reserve (weekend) training should be limited to institutions within approximately 25 miles radius of Marine Corps bases or Navy and Marine Corps Reserve Centers. Consideration should be given to VOTEC institutions having billeting and messing facilities, regardless of distance from military installations, for mobilization planning and Marine Corps Reserve annual active duty for training.

10. The proposed Marine Corps Order 15___ presented in TAEG Report 22-1 should be issued by Headquarters Marine Corps for VOTEC training.

11. The Marine Corps VOTEC training program should adopt the guidelines established in TAEG Report 22-2.

12. The AVSCs should use the Training Specification for Navy/Marine Corps Vocational/Technical (VOTEC) Skill Training Program as the basic document when supported by the appropriate Program of Instruction for defining the specific VOTEC program to be procured. This specification is included in TAEG Report 22-2.

13. The Marine Corps should establish a policy that VOTEC contract agreements be "Negotiated Definite Quantity Contracts" with "both party" signature as defined in the ASPR.

14. The Marine Corps should consider a single site AVSC to serve jointly the Navy and Marine Corps in the San Diego and Hawaii area.

15. The CMC should bring to the attention of the Secretary of the Navy the Marine Corps Reserve VOTEC program.

MARINE CORPS EDUCATION AND TRAINING MANAGEMENT

1. The CMC should establish the Marine Corps Education and Training Command The training functions of the Deputy Chief of Staff (Air) and the functions of the Director of Education and Training, Headquarters Marine Corps, should be incorporated in the proposed Marine Corps Education and Training Command.

2. The recommended Marine Corps Education and Training Command should be co-located with the present Marine Corps Development and Education Center (MCDEC). The education functions of the MCDEC should be assigned to the Marine Corps Education and Training Command.

3 The major functions of the Marine Corps Education and Training Command should be the control and management of all separate and subordinate training activities of the Marine Corps. This should include officer and enlisted career development, technical, and recruit training.

4. The Marine Corps Education and Training Command should be assigned the function of early identification of personnel training requirements, job task analysis, and development of training equipment in support of major operational hardware development.

5. The Marine Corps Education and Training Command should make maximum use of the Naval Training Equipment Center as the principal developer of training equipment.

6. The Marine Corps Liaison Office at the Naval Training Equipment Center should be sponsored by the Marine Corps Education and Training Command, but continue to function under the Navy.

7. All Marine Corps Training Support Centers should be managed by the Marine Corps Education and Training Command.

8. The CMC should develop a plan for adjunct staffing of the Marine Corps Education and Training Command and the subordinate Marine Corps training activities with highly selected civilian experts in the field of education and training.

9. The Marine Corps should assign functions for civilian education specialists (GS-1710 series) to include professional expertise in the application of appropriate education technology, learning strategies, education and training requirements, long-range education and training plans, and evaluation of effectiveness of training

10. The current civilian technician supporting cognizant symbol "20" training equipment should be managed by the Marine Corps Education and Training Command.

11. The CMC should establish a career development program for the civilian education specialists and technicians (supporting cognizant symbol "20" training devices) and this program should be managed by the Marine Corps Education and Training Command.

12. The CMC, through the Marine Corps Education and Training Command, should implement plans for technical schools to be accredited by national associations; e.g., Southern Association of Colleges and Schools.

TAEG Report No. 22-1

CCT QUESTIONNAIRE

INSTITUTION:

LOCATION (1) DIST:

LOCATION (2) DIST:

LOCATION (3) DIST:

LOCATION (4) DIST:

ACCREDITED BY (1)

(2)

ENROLLMENT	FULL TIME	PART TIME	TOTAL
TOTAL	_____	_____	_____
DAY	_____	_____	_____
EVENING	_____	_____	_____

SIZE OF CAMPUS _____ ACRES

NO. BUILDINGS _____

CLASSROOM SPACE _____ FEET _____ ROOMS

LABORATORY/WORKSHOP SPACE _____ FEET _____ ROOMS

WHEN CONSTRUCTED: 19___ - 19___

FUNCTIONAL DESIGN: GOOD ___ FAIR ___ POOR ___

TUITION: _____ PER _____

AVERAGE CLASSROOM LOAD _____ STUDENTS

INSTRUCTOR/STUDENT RATIO: ___:___

COURSE DEVELOPER(S): _____

APPROACH: CONVENTIONAL___

SYSTEMS___

REMARKS: _____

Preceding page blank

INDUSTRY NEED CHECK? _____

NEED OF STUDENTS CHECK? _____

FORECAST NEED OF COMMUNITY EVIDENT? _____

ADEQUATE SOURCE OF QUALIFIED CANDIDATES? _____

LEARNING RESOURCE CENTER? _____

SIZE: _____

ITV _____ SOUND/SLIDE _____ 8MM _____

MICROFICHE _____ 16MM _____ P.I. _____

CARRELS: NO. ____ EQUIPPED WITH:

DRY _____ SOUND/SLIDE _____ FILM _____ CRT _____ RESPONSE _____

DISPLAY _____ P.I. _____ OTHER: _____

USED FOR (COURSES): _____

_____

SPECIAL FACILITIES FOR TRAINING:

AUTO SHOP: _____

ELECTRICAL SHOP: _____

FOOD PREPARATION: _____

DRAFTING: _____

SMALL ENGINE (MAINT. & REPAIR): _____

HEAVY EQUIPMENT OPERATION: _____

HEAVY EQUIPMENT REPAIR: _____

PHOTOGRAPHY LAB: _____

SURVEYING: _____

MATERIALS TESTING (CONSTR.): _____

MACHINE SHOP: LATHE(S) _____ DRILL PRESS _____

SHAPER(S) _____ BENCH GRINDER(S) _____ MILLING MACH. _____

BORING MILL(S) _____ POWER HACKSAW _____

METAL ENGRAVING PANTOGRAPH _____ OTHER _____

PRINT SHOP: OFFSET PRESS _____ PLATEMAKER (COPIER) ____

PLATEMAKER (BURNER) _____ STAPLING MACH. ____

DRILL (SINGLE SPINDLE) _____ COLLATOR (MAN.) ____ AUTO _____

PHOTO LAB _____ LETTERPRESS _____ VARITYPER _____

HEADLINER _____ LIGHT TABLE _____ XEROX COPIER _____

METAL WORKING: SHEET METAL _____ GAS CUTTING/WELDING _____

ARC WELDING_____ RIGGING_____ METAL WORKING_____ STEEL ERECTION_____

DIESEL ENGINES (OPERATION & MAINT.) CATERPILLAR _____ INTERNATIONAL _____

CUMMING _____ LD 465-1 MULTIFUEL _____ OTHER _____

COMMUNICATIONS (MAINT. & REPAIR) SYNCHRO UNITS _____

ALARM, WARNING, CALL BELL _____ INTERCOM SYS _____

TELEPHONE ____ ANNOUNCING ____ GYROCOMPASS ____ SELSYN INSTRUMENTS_____

AIR CONDITIONING, HEATING, REFRIGERATION: _____

PROPULSION ENGINES: STEAM: 600 psi _____ 1200 psi _____

OTHER _____

AUXILIARY ENGINES: BOILERS _____ DISTILLING _____

FOUNDRY SHOP: MOLDER___ PATTERN MAKER____ WOOD____ METAL____ PLASTER____

FOUNDRY FACINGS _____

CASTING: NON-FERROUS _____ FERROUS _____ ALLOY _____

CUPOLA FURNACE____ CORE BAKING OVEN___ METALLURGY___ THERMITE CASTING____

ELECTRICAL CONSTRUCTION: (INSTALLATION/REPAIR)

HIGH VOLTAGE ____ LOW VOLTAGE ____ UNDERGROUND ____ GENERATORS ____

POWERPLANT CONTROL ____ CONDUIT INSTALL/REPAIR ____ LINEMAN ____

CONSTRUCTION: WOODWORKING/MILLWORK ____

LIGHT FRAME STRUCTURE____ ROOFING____ PAINTING____GLAZING____ MASONRY____

CONCRETE____ PLUMBING____

TAEG Report No. 22-1

CCT QUESTIONNAIRE: INSTITUTIONS WITH DORMITORY FACILITIES

HOUSING:

Cost: _____

Includes: Dormitory Room _____
3 meals per day, 7 days per week _____
Laundry, Dry cleaning _____
Student Clinic Services _____

Capacity: Male: _____
Female: _____

Dormitory Layout: (Sketch) Condition _____

_____

Students per Room _____ Bay: _____ Bldg: _____

Furnished with:

Head Facilities: (per building)

Male: No. ____ Toilets ____ Urinals ____ Basins ____ Baths ____ Shwr ____

Female: No. ____ Toilets ____ Basins ____ Baths ____ Shwr ____

General Condition: _____

_____

Telephone(s) _____ Per Bldg. _____

Study Facilities _____

_____

Messing Availability to Housing: _____

_____

Building Security: _____

Copy of Dorm. Rules _____

Parking Facilities _____ Fees? _____

MESSING FACILITIES:

Capacity: _____

Dining Hall Condition: _____

_____

Hrs. of Operation:

Breakfast _____

Lunch _____

Dinner _____

Other _____

Quality of Food _____

Dietitian Used? _____

Kitchen: _____ Condition _____

_____

MILITARY ADMINISTRATION:

Office Space: OIC_____ NCOIC_____ Clerk_____ Supply_____

Supply/Storage Room: _____ Location(s): _____

Civilian Housing: _____

_____

Nearest Military Admin. Support: (Orders, Travel, Finance) _____

_____

Nearest Airport(s): _____

Local Transportation _____

_____

SCHOOL:

Photographs & Sketches _____

Course Outlines, etc. _____

Integration Aspects _____

Recreation, Activities _____

_____

Distance From Town Center_____

Security and Discipline_____

Student Attitudes_____

Government Contracts or Agreements:_____

_____

_____

COMMUNITY:

Transportation:_____

Chamber of Commerce:_____

Churches:_____

Hotels, Motels:_____

Housing:_____

Recreation:_____

_____

Local Attitudes:_____

Medical Facilities:_____

Population:_____

RECRUITING OFFICE (Post Office?):_____

_____

CONTACT(S):_____

_____

_____

_____

FACILITIES SURVEY

CURRICULUM	Positions eq. class	Positions total	Number spaces	Classroom equipment	Training equipment	Operational equipment

OH: Overhead projector
SP: Slide projector
SSP: Sound-slide projector
8MP: 8mm movie projector
16MP: 16mm movie projector
BKB: Blackboard
CCTV: Closed circuit TV
TVM: TV monitor (Std.Bdcst)
CAR: Carrel(s)

ILLUSTRATOR (4911) USMC

CURRICULUM CONTENT INVENTORY

VOTEC INSTITUTION: _____

Elements of Training	Capability		
	Full	Part	Pot.
1. Mathematics - which includes the fundamentals of problem solving, fraction, reciprocals, percentages, units of measurement, powers and roots, ratio and proportion and mensuration.			
2. Basic Drafting - covers instruments and techniques, geometric construction, orthographic sketching, pictorial projection and drafting publications.			
3. Basic Machine Drafting - which includes thread conventions, finish symbols, surface quality marks and revisions for machine drawings.			
4. Ship/Aircraft Structural Drawing - includes ship drafting conventions, aircraft nomenclature, sheet metal layout for special drawings.			
5. Electrical and Electronic Drafting - covers symbols and conventions, diagrams, schematics and printed circuits as well as elements of simple circuits.			
6. Basic Illustration - a large phase covering perspective, freehand lettering, sketching, rendering, cartooning, human proportions, design, layout and composition of illustrations and color usage.			
7. Media - includes the elements of line, halftone and graphic media.			
8. Visual Aids - involves the construction of charts and graphs, training aids and their uses.			

Elements of Training	Capability		
	Full	Part	
9. Methods of Reproduction - basic information on lithographic reproduction, letterpress and gravure printing, blueprint and Diazo reproduction and office machine usage. Also the fundamentals and use of opaque and overhead projectors.			
10. Screen Process Reproduction - involves the principles of screen process using the cut paper stencil and the lacquer film methods.			

APPENDIX B

INDUSTRY TRAINING CAPABILITY ANALYSIS

The general capability of industry sources was discussed in detail in TAEG Report 13-1; Phase II addresses the application of existing industry training to specific Marine Corps skills.

Table B-1 is the result of the Phase II analysis, and from this examination it is apparent that the types of training with which industry is engaged fall into certain limited categories related to product lines. Few of the selected or proposed ratings would appear to be served by industry activity. However, in some instances manufacturing concerns have established training sales divisions which are designed to meet a wide variety of skill training needs of customers. In most of these cases, however, the service consists of providing instructors and curricula for presentation at the customer's site.

It is important to note that the table merely indicates that training is being conducted by the industry source for its own purposes and that the substance of such training may be limited to the essentials required for its workers. There is also no indication of the availability of spaces for Marine Corps trainees, which may not exist, or may vary from time to time. In addition, many industry sources have no interest in contractually providing such training, for various reasons. There is no common denominator for training facilities; they vary so widely that each source must be considered individually.

Perhaps the greatest problem relating to the use of industry sources for training lies in the fact that few, if any, are located within convenient access to Marine Corps training bases. Also, the procedure of industry sources providing instructors and curricula at Marine Corps facilities is useful where a shortage of qualified personnel exists, but would be self-defeating where economic reasons dictate the use of non-Marine Corps or interservice facilities and personnel currently in existence.

TABLE B-1. MARINE CORPS RELATED SKILL TRAINING IN INDUSTRY

CODE	Logistics Man	Plumbing & Water Sup.	Well Driller	Electrician	Elect. Eqpt. Repairman	Refrigeration Mechanic	Hygiene Eqpt. Oper.	Hygiene Eqpt. Repair	Metal Worker	Engineer Eqpt. Mechanic	Engineer Eqpt. Oper.	Bas. Printing & Reprod.
MOS	0441	1121	1122	1141	1142	1161	1171	1173	1316	1341	1345	1500
DOD	551	720	730	721	721	720	840	840	700	612	730	740
IN-DUSTRY[1]												
1033.2				X	X							
1033.3				X	X							
1033.4				X	X	X			X			
1033.5	X									X	X	
1033.6												
1033.7					X							
1033.8												
1033.9												
1033.10				X	X							
1033.11												
1033.12				X	X							
1033.13	X									X	X	
1033.14				X	X				X			
1033.15									X			
1033.16												
1033.17										X		
1033.18				X	X					X		
1033.19				X	X	X			X			
1033.20		X		X	X	X			X			
1033.21				X	X							
1033.22				X	X							
1033.23												
1033.24				X								
1033.26				X								
1033.27				X	X	X						

[1] Numerical indicators are used to identify specific industrial organizations. The key for these indicators is maintained in the TAEG files.

TABLE B-1. MARINE CORPS RELATED SKILL TRAINING IN INDUSTRY (continued)

CODE	Office Mach. Repair	Office Mach. Repair Chief	Body Repairman	Automotive Mechanic	Fuel & Elec. Sys. Repair	Motor Trans. Chief	Motor Vehicle Operator	Tractor Trailer Oper.	Truck Master	Legal Services Reporter	Illustrator	Audio-Visual Eqpt. Tech.
MOS	3241	3242	3513	3516	3518	3519	3531	3533	3537	4423	4911	4941
DOD	670	670	704	610	610	811	811	811	811	512	414	191
IN-DUSTRY 1033.2												
1033.3							X					
1033.4					X						X	
1033.5				X	X	X	X					
1033.6					X							
1033.7					X							
1033.8					X							
1033.9												
1033.10												
1033.11			X	X	X	X	X	X	X			
1033.12												
1033.13			X	X	X	X	X	X	X			
1033.14												
1033.15												
1033.16												
1033.17											X	X
1033.18												
1033.19												
1033.20	X	X	X	X	X	X	X					
1033.21												
1033.22												
1033.23												
1033.24												
1033.26											X	
1033.27			X	X	X						X	

TABLE B-1. MARINE CORPS RELATED SKILL TRAINING IN INDUSTRY (continued)

CODE	Bus. Printing & Repro. Opr.	Reproduction Officer	Duplicating Man	Offset Pressman	Plated Layout Man	Process Cameraman	Reproduction Chief	Reproduction Equip. Repair	Ultrman	Bus. Telecom Maint. Man	Basic Repairman	Basic Repair Officer
MOS	1501	1502	1521	1522	1521	1532	1541	1542	2511	2800	3200	3201
DOD		80	740	740	740	740	740	740	621	160	790	
IN-DUSTRY												
1033.2											X	X
1033.3									X	X		
1033.4											X	
1033.5												
1033.6											X	X
1033.7											X	X
1033.8												
1033.9												
1033.10									X	X		
1033.11												
1033.12												
1033.13												
1033.14												
1033.15										X		
1033.16												
1033.17						X				X		
1033.18											X	X
1033.19											X	X
1033.20											X	X
1033.21										X		
1033.22												
1033.23												
1033.24												
1033.26												
1033.27												

APPENDIX C

TRAINING INSTITUTION CAPABILITY ANALYSIS

A survey of 10 specific geographical areas was conducted to assess the capability of training institutions within these areas to provide Marine Corps training in selected MOS skills. Seven of the 10 geographical areas were selected because of the Marine installations within the areas. The remaining three areas were selected because of certain unique training characteristics of the training institutions located within these areas. A brief summary of the VOTEC training capability of institutions located within each of the 10 geographical areas is presented in this analysis. Specific data relating to the course offerings, tuition costs, and facilities of the training institutions analyzed are presented in tables C-1, C-2, and C-3. The 10 geographical areas surveyed were:

- Camp Lejeune Marine Corps Base, Jacksonville, North Carolina
- Marine Corps Recruit Depot, Parris Island, South Carolina
- Camp Pendleton Marine Corps Base, California
- Marine Corps Recruit Depot, San Diego, California
- Marine Corps Air Station, Kaneohe Bay, Hawaii
- Marine Corps Supply Depot, Albany, Georgia
- Quantico Marine Corps Base, Virginia
- Augusta, Georgia
- Atlanta, Georgia
- Clarksville, Georgia

CAMP LEJEUNE MARINE CORPS BASE AREA

Four community colleges were surveyed in this area as potential candidates for Marine Corps skill training. They were Coastal Carolina, Craven, Lenoir, and Wayne Community Colleges.

1. COASTAL CAROLINA COMMUNITY COLLEGE, located in Jacksonville, North Carolina, is only a short distance from Camp Lejuene and is the most conveniently located institution of those surveyed. This institution was formerly the Onslow Technical Institute and was granted community status in July 1970. It is accredited by the Southern Association of Secondary Schools and Colleges and other agencies. Facilities include a 50-acre campus, a new classroom building (Ragsdale Building), and a new occupational building under construction. The new construction incorporates the latest concepts in technical school arrangement. Facilities for technical training will be greatly augmented by planned expansion.

There are presently a total of 1300 students; 800 day and 500 evening (both campuses). The Learning Center is directed toward remedial and some vocational training (e.g., architectural drafting). Programmed instruction, film strip, and tape cassettes are used.

TABLE C-1 VOTEC SOURCES OF MARINE CORPS RELATED INSTRUCTION

VOTEC Institution	Marine Corps Base	Auto Mechanic	Air Light Specialist	Bakery [illegible]	[illegible]	Card Punch Operator	Culinary	Combat Engineer 1/	Computer Systems	Construction Drafting	Data Sys. Librarian	[illegible]	Electrician	Engineer Eqp. Mech.	Engineer Eqp. Opr.	Fabric Repair	[illegible]	[illegible]	Laundry	Legal Reporter	Logistics	Map Compiling	[illegible]	Metal Worker	Motor Transport	Motor Veh. Officer	Office Mach. Repair	Offset Press	Plate Layout	Process Photography	Refrig. Mechanic	Reproduction	Topographic Survey	Welding
North GA Tec-Voc 2/ Clarkesville, GA	None	X			X	X		X	X	X	X		X				X							X						X	X			
Augusta Area TEC Augusta, GA	None	X			X	X		X	X	X	X	X	X				X							X				X	X		X			
Atlanta Area TEC Atlanta, GA	None	X		X	X	X		X	X	X	X	X	X	X			X							X				X	X		X			
Coastal Carolina C.C. Jacksonville, N.C.	Lejeune	X			X	X			X	X	X		X				X			X		X		X							X		X	
Craven C.C New Bern, N.C.	Lejeune	X											X				X			X				X										
Lenoir Com. College Kinston, N.C.	Lejeune	X				X			X	X	X		X				X			X				X							X			
Wayne Com. College Goldsboro, N.C.	Lejeune	X			X	X			X		X			X			X							X										
Beaufort TEC Beaufort, S.C.	Parris Island	X			X			X		X			X	X	X 3/		X							X							X			
Saddleback J.C. Mission Viejo, CA	Pendleton	X								X												X										X		
Miracosta J.C. Oceanside, CA	Pendleton									X																								
Palomar J.C. San Marcos, CA	Pendleton	X				X				X		X	X			X		X		X				X				X	X	X				
Honolulu C.C. Honolulu, Hawaii	Kaneohe	X		X	X			X					X	X			X							X							X			
Kapiolani C.C. Honolulu, Hawaii	Kaneohe			X		X			X		X																							
Leeward C.C Pearl City, Hawaii	Kaneohe	X																																
North Virginia C.C. Woodbridge, VA	Quantico	X				X			X		X																						X	
North Virginia C.C. Annandale, VA	Quantico					X			X	X	X		X							X														
North Virginia C.C. Alexandria, VA	Quantico	X				X			X	X	X									X													X	
Albany Area Tech Sch Albany, GA	Albany	X			X	X		X	X	X	X	X	X	X		X	X							X				X	X		X	X		
City College San Diego, CA	San Diego	X			X	X				X			X	X						X				X						X	X			
Evening College San Diego, CA	San Diego	X				X			X	X	X		X	X						X				X						X				X
[illegible] College San Diego, CA	San Diego																			X														
Grossmont College El Cajon, CA	San Diego	X	X			X			X	X	X		X							X										X				X

1/ Construction phase only
2/ Dormitory facilities
3/ Discontinued-available

TABLE C-1. VOTEC SOURCES OF MARINE CORPS RELATED INSTRUCTION

VOTEC Institution	Marine Corps Base	Auto Mechanic	A-V Eqpt. Specialist	Bakery Officer	Body Repair	Card Punch Operator	Cartographer	Combat Engineer 1/	Computer Systems	Construction Drafting	Data Sys. Librarian	Duplicating	Electrician	Engineer Eqpt Mech.	Engineer Eqpt Opr.	Fabric Repair	Fuel-Elect. Repair	Hygiene Eqpt Opr.	Laundry Officer	Legal Reporter	Logistics	Map
North GA Tec-Voc 2/ Clarksville, GA	None	X			X	X		X	X	X	X		X				X					
Augusta Area TEC Augusta, GA	None	X			X	X		X	X	X	X	X	X				X					
Atlanta Area TEC Atlanta, GA	None	X		X	X	X		X	X	X	X	X	X	X			X					
Coastal Carolina C.C. Jacksonville, N.C.	Lejeune	X			X	X			X	X	X		X				X			X		X
Craven C.C. New Bern, N.C.	Lejeune	X											X				X			X		
Lenoir Com. College Kinston, N.C.	Lejeune	X				X			X	X	X		X				X			X		
Wayne Com. College Goldsboro, N.C.	Lejeune	X			X	X			X		X			X			X					
Beaufort TEC Beaufort, S.C.	Parris Island	X			X			X		X			X	X	X 3/		X					
Saddleback J.C. Mission Viejo, CA	Pendleton	X								X												X
Miracosta J.C. Oceanside, CA	Pendleton									X												
Palomar J.C. San Marcos, CA	Pendleton	X				X				X		X	X			X		X		X		
Honolulu C.C. Honolulu, Hawaii	Kaneohe	X		X	X			X					X	X			X					
Kapiolani C.C. Honolulu, Hawaii	Kaneohe			X					X		X											
Leeward C.C. Pearl City, Hawaii	Kaneohe	X																				
North Virginia C.C. Woodbridge, VA	Quantico	X							X		X											
North Virginia C.C. Annandale, VA	Quantico					X			X	X	X		X							X		
North Virginia C.C. Alexandria, VA	Quantico	X				X			X	X	X									X		
Albany Area Tech Sch Albany, GA	Albany	X			X	X		X	X	X	X	X	X	X		X	X					
City College San Diego, CA	San Diego	X			X	X				X			X	X						X		
Evening College San Diego, CA	San Diego	X				X			X	X	X		X	X						X		
Mesa College San Diego, CA	San Diego																			X		
Grossmont College El Cajon, CA	San Diego	X	X			X			X	X	X		X							X		

1/ Construction phase only
2/ Dormitory facilities
3/ Discontinued-available

C-1. VOTEC SOURCES OF MARINE CORPS RELATED INSTRUCTION

Data Typist	Operator	Cartographer	Combat Engineer 1/	Computer Systems	Construction	Drafting	Data Sys. Librarian	Duplicating	Electrician	Engineer Eqpt Mech.	Engineer Eqpt Opr.	Fabric Repair	Fuel-Electr. Repair	Hygiene Eqpt Opr.	Laundry Officer	Legal Reporter	Logistics	Map Compiling	Mapping Officer	Metal Worker	Motor Transport	Motor Veh. Officer	Office Mach. Repair	Offset Press	Plate Layout	Process Photography	Refrig. Mechanic	Reproduction Eqpt Repr.	Topographic Survey	Wireman
	X		X	X	X	X			X				X							X						X	X			
	X		X	X	X	X	X	X					X							X				X	X		X			
	X		X	X	X	X	X	X	X	X			X							X				X	X		X			
	X			X	X	X			X				X			X		X		X							X		X	
									X				X			X				X										
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BASE: KANEOHE MCAS, OAHU, HAWAII

TABLE C-2. SCHOOLS IN MARINE CORPS BASE AREAS

NAME/LOCATION OF INSTITUTION	DISTANCE FROM BASE	ACCREDITATION	ENROLLMENT	COSTS	DESCRIPTION	COURSES RELATED TO MARINE CORPS TRAINING		REMARKS
HONOLULU COMMUNITY COLLEGE Honolulu, Hawaii	15 mi.	WASC	(1975 Proj.) 5500 (day)	$10 - $25 per semester	An integral part of the University of Hawaii. 25 bldgs on 20 acres with shops and labs for 20 Trade/Technical areas, located near downtown Honolulu.	Architectural Drafting Technology Auto Body Repair and Painting Auto Mechanics Technology Blueprint Reading Business Education Carpentry Commercial Baking Computer Science	Electronics Technology Engineering Technology Heavy Equipment Maintenance Repair Industrial Electricity Machine Shop Technolg Refrigeration & Air Conditioning Sheet Metal & Plastics Technology Welding Technology	Offers certificates and associate degrees
KAPIOLANI COMMUNITY COLLEGE Honolulu, Hawaii	15 mi.	WASC	3000	$10 - $25 per semester	A small complex of buildings in Honolulu. Emphasis on hotel-restaurant, nursing, and business. 4-year Liberal Arts option.	Accounting Business Machines Computer Science Data Processing	Food Service General Business Merchandising Shorthand Typewriting	Some CAI being used.
LEEWARD COMMUNITY COLLEGE Pearl City, Hawaii	10 mi.	WASC		$10 - $25 per semester	A complex of several major buildings near Pearl Harbor	Auto Technology Drafting Technology Food Service Accounting Stenography	Computer Science Creative Arts Electronic Technology	Offers certificates and Associate degrees

BASE: PENDLETON MCB, CA.

TABLE C-2 SCHOOLS IN MARINE CORPS BASE AREAS (continued)

NAME/LOCATION OF INSTITUTION	DISTANCE FROM BASE	ACCREDITATION	ENROLLMENT	COSTS	DESCRIPTION	COURSES RELATED TO MARINE CORPS TRAINING		REMARKS
SADDLEBACK COLLEGE Mission Viejo, CA	10 mi. N	*WACS	4600 Day and Evening	No tuition for residents of California. Non-residents [illegible] per quarter unit ([illegible] 1978 [illegible])	Estab. 1967. 200 acre campus. [illegible] Bldgs., including Vocational Ed. and Cafeteria. A 2-year public community college	Accounting Automotive Tech. Clerical Drafting (Arch.) Drafting Tech. (Electro Mech.) Secretarial	Surveying Technology Sales and Merchandising	Located north of Camp Pendleton, in the city of Mission Viejo.
MIRACOSTA COLLEGE Oceanside, CA	7 mi. S	*WACS	Occupational Programs: Full-time: [illegible] Part time: [illegible]	No tuition for residents. Non-residents $35 per unit (max. $25 per semester) $10 charge per semester for Continuing Education Students. Books and Supplies estimated $150 per year	Estab. [illegible]. A 2 year public community college. 131 acre campus. 35 miles N of San Diego	Accounting Clerk Clerical Drafting Machine Tool Technology Secretarial Power Sewing Operator		
PALOMAR COMMUNITY COLLEGE San Marcos, CA	15 mi. SE	*WACS	Occupational Programs: Full-time: 2309 Part-time: 2077	No tuition for residents (Active duty military personnel eligible as residents).	Estab. 1946. Present buildings constructed 1956-1965, on 150-acre campus. Industrial Technology, Engineering, and Electronics buildings included. A 2 year public community college.	Accounting Apparel Construction Drafting (Arch.) Automotive Tech. Clerical Computer Science Drafting Tech. Electronics Tech.	Graphic Arts Photography Secretarial (Legal) Technical Art Waste Water Treatment Welding	Marine Associate Degree Completion Program (MADCOP) on campus. Servicemen's Opportunity College.

*Western Assn. of Colleges and Schools

BASE: MARINE CORPS SUPPLY DEPOT, ALBANY, GA.

TABLE C-2. SCHOOLS IN MARINE CORPS BASE AREAS (continued)

NAME/LOCATION OF INSTITUTION	DISTANCE FROM BASE	ACCREDITATION	ENROLLMENT	COSTS	DESCRIPTION	COURSES RELATED TO MARINE TRAINING		REMARKS
Albany Area Vocational-Technical School 1021 Love Road Albany, GA 31705 Mr. Howard Waters, Director (912) 436-0395	9 Mi.	SACSS		Registrational $5 No tuition Supply Fees $20-50 Books & Equipment	New modern complex with excellent facilities for vocational-technical instruction, one of 24 such schools in GA. 2 campuses, with 24 classrooms, 14 fully equipped labs. State certified instructors.	Air Conditioning-Refrigeration Automotive Mechanics Business Education Computer Programming Drafting & Design Electrical Technology Machine Shop Printing Welding	Auto Body and Fender Repair Masonry Carpentry Diesel Mechanics Electrical Construction & Maintenance Marketing Radio & TV Repair	

BASE: CAMP LEJEUNE, N.C.

TABLE C. SCHOOLS IN MARINE CORPS BASE AREAS (continued)

NAME/LOCATION OF INSTITUTION	DISTANCE FROM BASE	ACCREDI-TATION	ENROLLMENT	COST	DESCRIPTION	COURSES RELATED TO MARINE TRAINING		REMARKS
COASTAL CAROLINA COMMUNITY COLLEGE 222 Georgetown Road Jacksonville, N.C.	8-10 Mi.	SACSS IDC 1966 T.I. 1967 CC 1970	Total: 1300 Day: 800 Evening: 500	Tuition: VOC-TECH Lltime - $32 Part-Time $3 per quarter hr	30 acre Georgetown Road campus. New 73-acre Ragsdale Campus under construction will provide modern construction Electrical shop, Auto Mechanic Shop, Welding Shop, Air Conditioning-Refrigeration Shop, Radio-TV Laboratory	Air Conditioning & Refrigeration Auto Mechanic Accounting Radio-TV Repair Architect, Graphics Civil Engineering Machine Shop	Auto Body Repair Electrical Installation & Maintenance Masonry Welding Business Drafting	Present facilities fair. Expect completion of $1 million Occupational Building by May, 1975 with greatly expanded modern facilities.
CRAVEN TECHNICAL INSTITUTE (COMMUNITY COLLEGE) Racetrack Road New Bern, N.C. 28560 Dr. Thurman E. Brock, Pres. 638-4131	40 Mi.	SACS* AAJC	Total: 672 Day: 455 Night: 218	Tuition: Full-Time $ (Qtr.) + $1 Part-Time $1.50 Per Qtr. hr. Out-of-State - $137.50 Per Qtr.	New Campus 1971 (Mryon) Now 2 modern buildings. Large expansion plan.	Accounting Automotive Mechanic Machinist Metal Fabrication	Mechanical Drafting Electronic Service Welding	
LENOIR COMMUNITY COLLEGE P.O. Box 188 Kinston, N.C. 28501 Dr. Jesse L. McDaniel, Pres.	48 Mi.	SACSS	Total: 1735 Day: F/Time: 881 P/Time: 454 Evening: 400	Tuition: $32 Per Qtr.	A modern buildings on 58-acre campus. Learning Center, capacity 230 students with carrel array, classrooms, shops & support facilities. Comprehensive, occupational & community.	Air Conditioning & Refrigeration Machinist Bricklaying Electro-Mechanics Radio-TV Service Accounting Drafting-Design Electronics	Auto Mechanic Plant Engineering Mechanic Carpentry Electrical Wiring Welding Court Reporter Data Processing	Experienced in providing training for Military Reserve through contract. Presently under capacity.
WAYNE COMMUNITY COLLEGE P.O. Drawer 1878 Goldsboro, N.C. 27530 (U.S. Hwy. 70 Bypass, between William St. & Wayne Mem. Blvd.) Pres. Clyde A. Erwin Jr. Dr. Jan Crawford, Admin. Asst.	44 Mi.	SACSS IDC 1957 T.I. 1963 CC 1967	1400 F/Time 3000 P/Time	Tuition: $32 Per Qtr.	55 acres. 7 class buildings 90,000 Sq. Ft.	Accounting Drafting & Design Industrial Engineer Auto Body Repair Auto Mechanic Machinist Welding	Data Processing Electronics Air Conditioning & Refrigeration Diesel Mechanic Watchmaker	

BASE: CAMP LEJEUNE, N.C.

TABLE C-2. SCHOOLS IN MARINE CORPS BASE AREAS (co

NAME/LOCATION OF INSTITUTION	DISTANCE FROM BASE	ACCREDI-TATION	ENROLLMENT	COSTS	DESCRIPTION	
COASTAL CAROLINA COMMUNITY COLLEGE 222 Georgetown Road Jacksonville, N.C.	8-10 Mi.	SACSS IDC 1964 T.I. 1967 CC 1970	Total: 1300 Day: 800 Evening: 500	Tuition: VOC-TECH Fulltime - $32 Part-Time - $3 per quarter hour	50 acre Georgetown Road campus. New 75-acre Ragsdale Campus under construction will provide modern construction. Electrical Shop, Auto Mechanic Shop, Welding Shop, Air Conditioning/ Refrigeration Shop, Radio-TV Laboratory	Air Co frigera Auto M Account Radio-T Archit Civil Machine
CRAVEN TECHNICAL INSTITUTE (COMMUNITY COLLEGE) Racetrack Road New Bern, N.C. 28560 Dr. Thurman E. Brock, Pres. 638-4131	40 Mi.	SACSS AAJC	Total: 672 Day: 454 Night: 218	Tuition: Full-Time Per Qtr. - $32. Part-Time - $2.50 Per Qtr. Hr. Out-of-State - $137.50 Per Qtr.	New Campus 1971 (Begun) Now 2 modern buildings. Large expansion plan.	Account Automot Machini Metal
LENOIR COMMUNITY COLLEGE P.O. Box 188 Kinston, N.C. 28501 Dr. Jesse L. McDaniel, Pres.	40 Mi.	SACSS	Total. 1739 Day: F/Time: 881 P/Time 458 Evening: 400	Tuition: $32 Per Qtr.	6 modern buildings on 58-acre campus. Learning Center, capacity 270 students with carrel arrsy, classrooms, shops & support facilities. Comprehensive, occupational & community.	Air Con Refrige Machini Bricklay Electro Radio-T Account Draftin Electro
WAYNE COMMUNITY COLLEGE P.O. Drawer 1878 Goldsboro, N.C. 27530 (U.S. Hwy. 70 Bypass, between William St. & Wayne Mem. Blvd.) Pres. Clyde A. Erwin, Jr. Dr. Jan Crawford, Admin. Asst.	64 Mi.	SACSS IEC 1957 T.I. 1963 CC 1967	1600 F/Time 3000 P/Time	Tuition: $32 Per Qtr.	55 acres. 7 class buildings 90,000 Sq. Ft.	Account Draftin Industri Auto Bo Auto Me Machini Welding

E C-2. SCHOOLS IN MARINE CORPS BASE AREAS (continued)

COSTS	DESCRIPTION	COURSES RELATED TO MARINE TRAINING		REMARKS
n: CH Fulltime - ime - $3 per r hour	50 acre Georgetown Road campus. New 75-acre Ragsdale Campus under construction will provide modern construction Electrical Shop, Auto Mechanic Shop, Welding Shop, Air Conditioning/ Refrigeration Shop, Radio-TV Laboratory	Air Conditioning & Refrigeration Auto Mechanic Accounting Radio-TV Repair Architect, Graphics Civil Engineering Machine Shop	Auto Body Repair Electrical Installation & Maintenance Masonry Welding Business Drafting	Present facilities fair. Expect completion of $1 million Occupational Building by May, 1975 with greatly expanded modern facilities.
n: ime Per $32. ime - $2.50 r. Hr. -State - 0 Per Qtr.	New Campus 1971 (Begun) Now 2 modern buildings. Large expansion plan.	Accounting Automotive Mechanic Machinist Metal Fabrication	Mechanical Drafting Electronic Service Welding	
n: r Qtr.	6 modern buildings on 58-acre campus. Learning Center, capacity 270 students with carrel array, classrooms, shops & support facilities. Comprehensive, occupational & community.	Air Conditioning & Refrigeration Machinist Bricklaying Electro-Mechanics Radio-TV Service Accounting Drafting-Design Electronics	Auto Mechanic Plant Engineering Mechanic Carpentry Electrical Wiring Welding Court Reporter Data Processing	Experienced in providing training for Military Reserve through contract. Presently under capacity.
n: r Qtr.	55 acres. 7 class buildings 90,000 Sq. Ft.	Accounting Drafting & Design Industrial Engineer Auto Body Repair Auto Mechanic Machinist Welding	Data Processing Electronics Air Conditioning & Refrigeration Diesel Mechanic Watchmaker	

BASE: MARINE CORPS BASE, SAN DIEGO, CA

TABLE C-2. SCHOOLS IN MARINE CORPS BASE AREAS (c

NAME/LOCATION OF INSTITUTION	DISTANCE FROM BASE	ACCREDITATION	ENROLLMENT	COSTS	DESCRIPTION	
SAN DIEGO COMMUNITY COLLEGES: 1. San Diego City College	3 mi.	WASC SCDE	(1970) M 1470, W 595(FT) M 1145, W 585(PT)	No tuition Books/supplies: $30-$75 sem. Tools and materials up to $175 sem.		Air c Refr Appli Auto Diese Engin
2. San Diego Mesa College	10 mi.	WASC SCDE	(1970) M 2435, W 1215(FT) M 815, W 970(PT)	No tuition as above	New campus 1964. Post-secondary general, transfer, technical-vocational education	Elect Legal Arch.
3. San Diego Evening College	Various locations	WASC SCDE	(1970) M 50, W 35(FT) M 5950, W 2805(PT)	No tuition as above	Wide variety of progras on City, Mesa and Miramar campuses. Primarily part-time (evening)	Autom Barbe Elect Elect Elect Tech Diese Engin Graph Indus
Grossmont College El Cajon, CA	12 mi.	WASC SCDE	(1970) Total over 10,000 Day students 7,225	No tuition as above	135 acre campus built 1964. Offers career-vocational programs to high school graduates and adults	Photo Techn Elect Indus Instr Tech

C-2. SCHOOLS IN MARINE CORPS BASE AREAS (continued)

OSTS	DESCRIPTION	COURSES RELATED TO MARINE TRAINING		REMARKS
lies: materials 5 sem.		Air conditioning and Refrigeration Appliance Repair Auto Body Diesel Technology Engineering Drawing	Industrial Electricity Photography Technical Illustration TV Service/Repair Welding Machine Shop	Primary source of technical training
	New campus 1964. Post-secondary general, transfer, technical-vocational education	Electronic technology Legal Secretary Arch. Drafting		Primarily business and health services instruction
	Wide variety of progrms on City, Mesa and Miramar campuses. Primarily part-time (evening)	Automotive Barbering Electrical Lineman Electrical Wireman Electronic Service Technician Diesel Technology Engineering Drawing Graphic Reproduction Industrial Electricity	Ironworking Lathing Machine Shop Machinist Technical Illustrator TV Service/Repair Water and Sewage Welding Photography	Evening classes only
	135 acre campus built 1964. Offers career-vocational programs to high school graduates and adults	Photography Technical Illustration Electronics Industrial Technology Instructional Media Technology	Legal Secretary Automotive Mech. Instructional Media Technology	Interesting program. Related to illustrator-draftsman training.

BASE: PARRIS ISLAND, SC

TABLE C-2. SCHOOLS IN MARINE CORPS BASE AREAS (contin

NAME/LOCATION OF INSTITUTION	DISTANCE FROM BASE	ACCREDI-TATION	ENROLLMENT	COSTS	DESCRIPTION	
BEAUFORT TECHNICAL EDUCATION CENTER Beaufort, SC	3 mi	Affiliate member **SACS State Board	Day: 311 Evening: 140	Quarterly fees and tuition for residents: $67	A 2-year post-secondary Tech. Education Center of STATE SYSTEM. A complex of old and new buildings including Welding Shop, Auto/ Diesel Shop, Auto Body Shop, Electricity Shops, Carpentry, Masonry Shops, et. al. Limited student capacity.	Air Condit Refrige Appliance and Rep Automotiv Carpentry Diesel an Equipme Food Servi Auto Body

*Not currently offered - lack of space

**Southern Association of Colleges and Schools

TABLE C-2. SCHOOLS IN MARINE CORPS BASE AREAS (continued)

COSTS	DESCRIPTION	COURSES RELATED TO MARINE TRAINING		REMARKS
Quarterly fees and tuition for residents: $67	A 2-year post-secondary Tech. Education Center of STATE SYSTEM. A complex of old and new buildings including Welding Shop, Auto/ Diesel Shop, Auto Body Shop, Electricity Shops, Carpentry, Masonry Shops, et. al. Limited student capacity.	Air Conditioning and Refrigeration Appliance Service and Repair Autoeotive Mechanic Carpentry Diesel and Heavy Equipment Mechanic Food Services Auto Body Repair	*Heavy Equipment Operator Industrial Electronics Masonry Mechanical Drafting and Design Welding Electricity	Developed (1971) Electrical technology program based on systems approach. Use multi-media, multi-entrance dates, behavioral objectives, self-paced study, positive reinforcement. (Not currently offered (1974).)

BASE: SAN DIEGO/PENDLETON

TABLE C-2. PRIVATE TRADE SCHOOLS IN MARINE CORPS B

NAME/LOCATION OF INSTITUTION	DISTANCE FROM BASE	ACCREDITATION	ENROLLMENT	COSTS	DESCRIPTION	
South Bay Trade Schools, Inc. 217 Newton Ave. San Diego	San Diego 5 mi. Pendleton 25 mi.	*NATTS	Varies with training: e.g. welding: 159 output per year mechanic: 27 per year	Negotiated cost $6.00 per student hour for special automotive mechanic course. Costs vary with course length and subject. Proposed 8-week (240 hour) Auto Mechanic (3516) course estimates $5.70 per student hour.	Several buildings on a 2½ acre campus near downtown San Diego. Facilities include: Transmission & motor overhaul shop Auto body repair shop Auto paint shop Pipefitting shop Tune-up shop Welding shop Shipfitting shop Sheetmetal shop Drafting shop	Weld Ship Pipe Shee

*National Association of Trade and Technical Schools

LE C-2. PRIVATE TRADE SCHOOLS IN MARINE CORPS BASE AREAS (continued)

Revised 3/3/75

COSTS	DESCRIPTION	COURSES RELATED TO MARINE TRAINING		REMARKS
ated cost $6.00 dent hour for automotive c course. ary with length and d 8-week ur) Auto c (3516) estimates er student	Several buildings on a 2½ acre campus near downtown San Diego. Facilities include: Transmission & motor overhaul shop Auto body repair shop Auto paint shop Pipefitting shop Tune-up shop Welding shop Shipfitting shop Sheetmetal shop Drafting shop	Welding Shipfitting Pipefitting Sheetmetal	Auto Mechanic Auto Body Repair Drafting	Approved for veteran training Classes start weekly Individualized instruction

TABLE C-3. SELECTED SCHOOLS OFFERING MARINE CORPS

NAME/LOCATION OF INSTITUTION	REASON FOR SELECTION	ACCREDI-TATION	ENROLLMENT	COSTS	DESCRIPTION	
North Georgia Technical & Vocational School, Clarksville, GA 30523 James H. Marlowe, Dir.	Housing & Messing available	SACSS	Total: 1050 Day: 700 Evening: 350 Part-time: 2000	No tuition. Boarding Expense: $200 per quarter, includes room, 3 meals daily, 7 days per week, laundry, dry-cleaning, clinic. Student Activity Fee $12.50 per yr. Textbook & Supplies.	State-operated Post-Secondary Technical Institute. Eight major buildings plus dormitories on 30-acre campus (364 acres adjoining). 142,000 sq. ft. instructional space. Five dormitories for 468 students. Exceptional equipment and lab/workshops.	Electro Comm Indus Servi Automot Body Mecha Draftin Fabric Masonry Refrig condi Account
Augusta Area Technical School, 2025 Lumpkin Road, Augusta, GA 30906 George M. Hardy, Dir.	Experience in Marine Reserve Training	SACSS	Total: 2400 Day: 1200 Evening: 1200 Part-time: 3000	No tuition. Fees: $15 quarter. Textbooks Supplies	State-operated Post-Secondary Technical Institute. Four campuses in area. Eleven major buildings, 15 temporaries. New 16,000 sq. ft. Machine Shop (Butler Building)	Account Auto Bo Auto Me Communi nolog Draftin Electro Instrum nolog Secreta
Atlanta Area Technical School, 1560 Stewart Avenue Atlanta, GA 30310 Robert A. Ferguson, Dir.	Experience In Marine Reserve Training	SACSS	Total: 7000 Day: 3000 Evening: 4000 (1970)	No tuition. Registration fee $15 per qtr. Supplies: $15 qtr. Textbooks	State-operated Post-Secondary Technical Institute. Faculty 200 F/T, 200 P/T. Advanced instruction for industry needs. Self-paced individual instruction & CAI.	Account Archite Auto Bo Barberi Carpent Commerc Wirin Compute Diesel Draftin Machine Radio/T Secreta
South Georgia Technical & Vocational School, Americus, GA 31709	Housing and Messing available	SACSS	Day: 650 Nite: 650	No tuition. Boarding expense $200 per qtr.	State-operated Post-Secondary Technical Institute	Account Auto Bo Automob Busines Cabinet Diesel Electri Maint

C-3. SELECTED SCHOOLS OFFERING MARINE CORPS-RELATED INSTRUCTION

COSTS	DESCRIPTION	COURSES RELATED TO MARINE TRAINING		REMARKS
ion. g Expense: r quarter, m room, 3 ily, 7 days k, laundry, ning, Activity .50 per yr. k & Supplies	State-operated Post-Secondary Technical Institute. Eight major buildings plus dormitories on 30-acre campus (364 acres adjoining). 142,000 sq. ft. instructional space. Five dormitories for 468 students. Exceptional equipment and lab/workshops.	Electronics: Communications Industrial Radio-TV Service Automotive: Body Repair Mechanics Drafting Fabric Maint. Masonry Trades Refrigeration & Air-conditioning Accounting	Machine & Tool Design: Machine Shop Tool & Die Plastics Molding Carpentry Construction Trades Electrical Construction Electrical Appliance Service Photography Small Engine Repair Data Processing Secretarial	Excellent facilities for instruction, housing and support. Space available for cadre personnel. Favorable environment for detached training. Administration & faculty cooperative. Recommended for further consideration for detached training.
ion. 5 quarter. s s	State-operated Post-Secondary Technical Institute. Four campuses in area. Eleven major buildings, 15 temporaries. New 16,000 sq. ft. Machine Shop (Butler Building)	Accounting Auto Body Repair Auto Mechanics Communications Technology Drafting & Design Electronic Tech. Instrumentation Technology Secretarial Science	Air Conditioning & Heating Brick, Tile, Stone Masonry Data Processing Electrical Technology Food Service Mgmt. Machine Shop Printing Welding	Planning new consolidated campus, including 55,600 sq. ft. Technical Building, estimated cost: $8,662,710. Currently at capacity. Briefly provided contract training (Auto Mainetnance) for local Marine Reserve Unit (1973). May include dormitories.
ion. ation fee qtr. : $15 qtr. s	State-operated Post-Secondary Technical Institute. Faculty 200 F/T, 200 P/T. Advanced instruction for industry needs. Self-paced individual instruction & CAI.	Accounting Architectural Drafting Auto Body Repair Barbering Carpentry Commercial & Residential Wiring Computer Technology Diesel Mechanics Drafting Machine Shop Radio/TV Service Secretarial	Air Conditioning & Heating Auto Mechanics Bricklaying Civil Engineering Commercial Art Cooking & Baking Data Processing Electrical - Electronic Tech. Offset Duplication Printing Welding	Well-equipped, progressive school with wide range of skill training.
on. expense qtr.	State-operated Post-Secondary Technical Institute	Accounting Auto Body Repair Automobile Mechanics Business Machine Repair Cabinet Making Diesel Mechanics Electrical Constr. & Maintenance	Electrical Technology Electronic Tech. Machine Shop Mechanical Tech. Radio & TV Repair Secretarial Clerical	Housing - Dormitory facilities for men and women are provided at N. Georgia Tech. & Vocational School at Clarkesville and S. Georgia Tech. & Vocational School at Americus. Facilities may be compared with college dormitories, but average approximately $16.67 per week for either male or female students. This amount includes 3 meals a day, laundry, dry cleaning & infirmary fees.

The technical training shops, although not new, are generally well equipped; for example, the construction electrician shop is excellent, with a wide variety of building wiring mockups. The sheet metal laboratory can handle 18 or more students; there are refrigeration and air conditioning, soil testing, brick mason, welding workshops, and labs. The automobile mechanics lab is small and inadequate. Most of these facilities are expected to be replaced on the new campus within three years.

2. LENOIR COMMUNITY COLLEGE is located in Kinston, North Carolina, 40 miles from the Marine Corps Base; however, unique qualifications make it worthy of special consideration as a source of Marine Corps skill training. For example, this institution, through a contractual agreement with the Army Reserve, provided retraining for an entire group of Army reservists over a 12-month period.

The college is new and modern, with a 58-acre campus and six major buildings offering a curriculum in a wide variety of vocational and technical fields. It is currently operating under capacity in many areas, including machine shop. Excellent feedback is provided by industry, which participates in the design and alteration of courses.

This college is one of the best equipped of its type in the Lejeune area and should be considered as a qualified source for Marine basic skill training.

3. CRAVEN COMMUNITY COLLEGE is an accredited member of the Community College System of North Carolina, located in Newbern, 35 miles from the Lejeune Marine Corps Base and 17 miles from Cherry Point Marine Corps Air Station. It is in the early stages of construction with two modern buildings on a 100-acre campus. Future plans include the construction of a number of major buildings and greatly increased instructional capability. At the present time, offerings of interest to this study are limited, but include auto mechanics, machine shop, drafting, and welding.

4. WAYNE COMMUNITY COLLEGE, located in Goldsboro, North Carolina, possesses very good training facilities; however, it is too distant (64 miles) from Lejeune Marine Corps Base to warrant consideration for Marine Corps skill training.

PARRIS ISLAND MARINE CORPS BASE AREA

The primary source of VOTEC training in this area is the Beaufort Technical Education Center.

BEAUFORT TECHNICAL EDUCATION CENTER is located in Beaufort, South Carolina, a few miles from the Parris Island Marine Corps Base. This school is an accredited member of the South Carolina Technical Education Center (TEC) system that provides post-secondary and some secondary training in a number of technical skills.

Many of the buildings which make up the campus are older structures; however, a modern facility used primarily for technical training has recently been completed. This new facility is used to support training programs such as diesel mechanics, electronics, and welding.

The average technical course of the Industrial Department takes four quarters, at 12 weeks per quarter (360 contact hours). Cost of attendance is about $52 per quarter, plus the cost of books and supplies.

Until recently, the institution offered a heavy equipment operator's course. This course was discontinued due to lack of space; however, it is possible that the training could be reinstated if arrangements for a suitable working area could be made. (NOTE: This training was seldom found in VOTEC schools.)

CAMP PENDLETON MARINE CORPS BASE AREA

There are three community colleges located in close proximity to the Marine Corps Base that provide both day and evening classes at the post-secondary level. They are Saddleback College, Mission Viejo, California; Palomar Community College, San Marcos, California; and Miracosta College, Oceanside, California. These institutions are members of the California system of public community colleges and are accredited by the State and by the Western Association of Colleges and Schools. These institutions have no tuition charges for California residences; however, charges are assessed for books and supplies.

1. SADDLEBACK COLLEGE is a two-year institution located 10 miles north of Camp Pendleton. Its program of construction for a permanent campus began in 1969, and is still continuing. Relocatable facilities have been greatly expanded along with the construction of new air conditioned classrooms and laboratories on the 199-acre campus. Present facilities include structures for administration, cafeteria, vocational education, business, and other departments. The college operates on the quarter system with starting dates in September, December, March, and June.

2. PALOMAR COMMUNITY COLLEGE is a two-year public community college established on a 150-acre campus approximately 15 miles from the Marine Corps Base. Current enrollment is approximately 5100 students. Educational programs include industrial technology, business, engineering, science, and electronics.

The Navy Associate Degree Completion Program (ADCOP) and Marine Associate Degree Program (MADCOP) originated at Palomar in 1965. In addition, Palomar College has been designated as a "Servicemen's Opportunity College" by the American Associated Community and Junior Colleges.

3. MIRACOSTA COLLEGE is located on a 131-acre campus about seven miles south of Camp Pendleton. It is a two-year post-secondary community college, offering training in several career fields. Both day and evening classes are offered. Currently, a tuition fee of $10 per semester is charged military personnel pursuing individual educational goals in the Continuing Education Division. Tuition is free to resident students in the Day Division.

MARINE RECRUIT DEPOT, SAN DIEGO AREA

All of the junior college and vocational school programs were combined in 1954. A new campus was built in 1956 which provides the college with technical and general education classrooms, as well as a library, student center, and administrative offices. Three operating divisions were established in 1962. They were City College, Mesa College, and Evening College. These colleges are accredited by the Western Association of Colleges and Schools.

1. SAN DIEGO CITY COLLEGE offers programs in the arts and sciences, business, and technical occupations. Specialized facilities are provided for such technical skills as auto mechanics, cabinet making, engineering technology, machine shop, and welding. Current enrollment is approximately 5000 students.

2. SAN DIEGO MESA COLLEGE consists of a complex of 20 buildings, including a Technical Arts building. Relatively few technical courses with which the study is concerned are taught at this facility. Enrollment is approximately 7500 students.

3. SAN DIEGO EVENING COLLEGE conducts a wide variety of classes on the City, Mesa, and Miramar (Regional Center) campuses, as well as numerous off-campus locations. Most technical training is done at the City College campus. Enrollment is approximately 14,500 students.

4. GROSSMONT COLLEGE, a member of the San Diego Community College Association, is located on a 135-acre site in the Fletcher Hills area adjacent to the cities of El Cajon and La Mesa. Technical/Vocational certificates and degrees are offered in data processing, engineering technology, food service management, and industrial technology. The laboratory facilities and equipment available in all of the vocational education programs are of the same quality as found in actual practice.

5. SOUTH BAY TRADE SCHOOL is a unique privately operated VOTEC institution located in downtown San Diego. Current courses include drafting, sheet metal, pipefitting, shipfitting, welding, and automotive mechanics. The school has a history of providing speciality training for government and industry. Facilities include simulated work environment areas where hands-on skill training is conducted. In 1974, this institution

provided a special two-week program for the 4th Marine Division in support of MOS 3516 qualification. This course proved to be highly successful and is an excellent example of the VOTEC concept used to train Marine Reserve personnel during annual active duty training.

MARINE CORPS AIR STATION, KANEOHE BAY AREA

VOTEC training in Hawaii is carried out as an integral part of the University of Hawaii. Four of the seven community colleges (Honolulu, Kapiolani, Leeward, and Windward) are on the main island of Oahu. These community colleges have both academic and vocational programs.

1. HONOLULU COMMUNITY COLLEGE occupies 20 acres near downtown Honolulu. Shops and laboratories, equipped with appropriate tools and supplies, are maintained for programs in over 20 trade-technical areas.

In addition to its main campus, Honolulu Community College has an Airport campus which offers an Aviation Maintenance Technician program. This facility includes completely equipped shops which meet Federal Aviation Administration requirements.

Three other facilities are included as part of the Honolulu Community College. One is the Hawaii State Senior Center, located in the Kalihi-Palama area. This Center is education vice technical oriented. A second facility is the Palama Fire Station, located near the main campus and used for various activities connected with the College's Fire Science program. The third facility is the Kalihi-Palama Education Center which provides educational opportunities for adults over 16 years of age who cannot participate in other programs.

2. KAPIOLANI COMMUNITY COLLEGE has modern facilities arranged on a relatively small campus. Principal buildings include a two-story Business Education structure, a Food Service Education facility, and a Health Service Education classroom building. A number of small buildings serve as business and counseling offices, classrooms, and student government offices. This institution is using CAI in certain training programs.

3. LEEWARD COMMUNITY COLLEGE is located in Pearl City, Hawaii. Like all Hawaii community colleges, Leeward Community College offers both certificate and apprenticeship programs. These programs vary from one to two years in duration. Although these programs are predominantly technical/vocational oriented, academic programs are available.

MARINE CORPS SUPPLY DEPOT, ALBANY AREA

Only one institution was surveyed in this area. This was the Albany Area Vocational/Technical School located close to the Marine Corps Supply Depot.

ALBANY AREA VOCATIONAL/TECHNICAL SCHOOL is one of 24 area VOTEC schools in operation in the State of Georgia. It is a public supported institution operated as a joint endeavor by the Dougherty County Board of Education and the State Department of Education, Vocational Education Division.

In addition to a variety of VOTEC programs, the Albany Area Vocational/Technical School offers communication classes which are aimed at improving student communication skills.

"Quick start" programs are devised to train personnel for industry in particular skill areas. The school trains four to five thousand students per year for industry. In view of the excellent facilities, the apparent high quality of instruction at this institution, and the close priximity of the Marine Corps Depot for housing and administrative support, the Albany Area Vocational/Technical School appears to be an outstanding candidate for Marine Corps skill training.

QUANTICO MARINE CORPS BASE AREA

The five-campus Northern Virginia Community College is the prime resource for VOTEC training in northern Virginia.

NORTHERN VIRGINIA COMMUNITY COLLEGE is an accredited member of the Virginia State System of Community Colleges, is approved by the State Board for Community Colleges in Virginia and the State Council of Higher Education for Virginia, and is accredited by the Southern Association of Colleges and Schools. It is a post-secondary institution with five separate campuses. The campuses located at Annandale, Woodbridge, and Alexandria, are the most likely candidates for Marine Corps Technical training.

1. THE WOODBRIDGE CAMPUS offers evening courses at Woodbridge Senior High School and at Ft. Belvoir. The main campus is located about 15 miles from the Quantico Marine Corps Base.

Although this campus is the nearest to the base, it offers less adequate facilities and fewer courses of interest to this study. In addition, only evening classes are offered.

2. THE ANNANDALE CAMPUS is located approximately 25 miles from Quantico on a 78-acre site. The campus has a general classroom building, a laboratory building, an Administration-Library building, a Food Service Technology building, a TV-Technical building, and a Nurse Training building.

3. THE ALEXANDRIA CAMPUS is located approximately 25 miles from the Marine Corps Base. It is a large facility accommodating the various

campus functions on four levels, including student services, a teaching auditorium, faculty and administration, general classrooms, laboratories, and studios.

AUGUSTA, GEORGIA AREA

This area was of special interest to the study because the local Marine Corps reserve unit had previously arranged technical training at the Lumpkin facility of the Augusta Area Vocational/Technical School.

AUGUSTA AREA VOCATIONAL/TECHNICAL SCHOOL is one of the State of Georgia's VOTEC post-secondary school system facilities; administrative control is primarily exercised by the County Board of Education. There are four separate campuses of Augusta Tech in the city, plus operating locations at Richmond Academy High School, and a number of other locations. Technical training of interest to this study is carried out primarily at the Lumpkin Road and White Road campuses.

There are no Marine Corps bases convenient to this area, and dormitories are not provided. Quarters and administrative support could possibly be provided by Fort Gordon.

The Augusta Area Vocational/Technical School conducts regular daytime and evening classes. Total enrollment is approximately 2000 students. A minimum of 12 students is required to establish a class. The institution is currently operating considerably over designed capacity with little space available for an influx of military students. Plans have been submitted, however, to greatly increase the school's capacity through the construction of new technical facilities. This institution does not appear to be an appropriate source of training at this time, but may warrant review at some future date.

ATLANTA, GEORGIA AREA

The principal source of VOTEC training in the Atlanta area is the Atlanta Area Vocational/Technical School. This school is a member of the Georgia State system of public vocational/technical schools and provides post-secondary training in a number of technical skills.

This institution is remote from Marine Corps bases and was included in the study because of its past experience in providing training for the Marine Corps.

ATLANTA AREA VOCATIONAL/TECHNICAL SCHOOL facilities, organization, and curricula are similar to those of the Clarksville, Augusta, and Albany Area Vocational/Technical schools. Residents are not charged tuition; however, a registration fee of $21 per quarter is required.

The school is located in a modern two-story building in Atlanta. Equipment and facilities are new and reflect the latest in educational technology. Training areas are organized to simulate actual conditions and equipment in industry. Student capacity is 3000 day students and 4000 evening students.

The curriculum of the school is selected as a result of population trends, growth of industry, the advent of new industries, and projections of future job needs. Curricula are changed or phased out as the need for a particular skill or technology decreases or ends.

Pre-employment programs prepare students for jobs in skilled, business, or paramedical occupations. Evening programs are offered which are designed to assist employed individuals in updating their skills or to acquire new skills. Courses vary from 2 to 12 weeks in length and are scheduled throughout the year based upon need and request. Quarters and administrative support could possibly be provided by local military installations.

CLARKSVILLE, GEORGIA AREA

This area was examined because of the North Georgia Area Vocational/Technical School which is unique among VOTEC schools because of its dormitory facilities. Very few VOTEC schools have such facilities.

NORTH GEORGIA AREA VOCATIONAL/TECHNICAL SCHOOL is located on a 335-acre tract of State owned land approximately two miles from Clarksville, Georgia. This school is one of two such institutions in Georgia directly controlled by the State Department of Education (the other is in Americus, Georgia) which possess excellent dormitory facilities. As one of the original VOTEC schools in the state, it has developed steadily with modern buildings and outstanding instructional facilities.

Dormitory housing was examined in some detail, since there are no military bases in the area. Of the 468 rooms available, only 271 are presently occupied. Offices and other support facilities could be made available to Marine supervisory personnel. Cost is $200 per quarter, or $800 per year per student. This includes a dormitory room (double occupancy), and three meals per day, seven days per week. Laundry and dry cleaning facilities are available.

This institution appears to merit special consideration and further investigation as a source of training where detached duty is warranted. School officials are cooperative and receptive to discussions of costs and other considerations.

APPENDIX D

COST DATA SURVEY QUESTIONNAIRE

GENERAL COMMENTS

1. The following forms are to be used in conducting a cost analysis to establish baseline information on the total cost of training. We are primarily interested in these costs for long-run planning purposes. Consequently, we define total costs to not only include the flow of funds which occur during the short run but also to include charges made for the stocks (capital investments) of resources employed in training. Much of the data on the following forms deal with those stocks, and often data are not readily available to answer the questions. In many instances estimates must be made. It is requested that an effort be made to answer all questions, drawing on whatever information is available to improve the quality of the estimate.

2. The unit on which data are being collected is the course, and often costs are incurred in training which cannot be totally attributed to each course. Such costs should be prorated across courses served according to student man-hours of instruction. Do not, in any case, go beyond the school in developing the costs.

3. You may follow one of two general approaches in filling out the forms depending upon your particular situation.

The first approach requires that you allocate to each course its share of all direct and indirect costs (data) incurred through and including the school headquarters.

A second approach can be followed where unique headquarters can be identified. The second approach will not require prorating of headquarters data. Instead, aggregate data are provided for each headquarters, and the headquarters for which each course is administratively under are identified.

For example, assume you are asked to cost out course C1. Using the first approach you would determine all direct costs of the course and prorate all other costs and/or data through and including school headquarters. This means that data for school headquarters, headquarters A, and headquarters A1 would be prorated on basis of total instructional hours. Prorating factors for school headquarters would be C1/(C1+C2+111+C12); for headquarters A, C1/(C1+C2+C3+C4); and, for headquarters A1, C1/(C1+C2).

Using the second approach you could complete two headquarters forms--one for the school headquarters and one for headquarters A. Then you should ignore these headquarters in developing data for the course and only develop the data up through headquarters A1. The second method will be especially useful for those instances where several courses must be costed out under the same headquarters since the headquarters form only need be completed once.

DIRECTIONS

1. The objective of this form is to obtain the total yearly (long-range) cost of development and maintenance of instructional courseware (material).

2. Instructional courseware is the information bearing material presented through each media. Examples: lecture notes or script, a motion picture film, TV script, software for CAI, textbook.

3. If the development of a particular piece of courseware was by contract then use the contract price as the basis of determining the development costs.

4. Certain types of courseware may have zero development costs. Example: a standard text which was not uniquely developed for this course and which is readily available on the open market.

5. NOTE: Courseware DOES NOT include any hardware used in presentation. Example: the film used in a motion picture projector is courseware but the projector is not courseware.

HEADQUARTERS

Name of Headquarters_____

I. Personnel

Officers: Average Grade_____; Number_____
Enlisted: Average Grade_____; Number_____
Civilian: Average Grade_____; Number_____

II. Facilities*

What is the total sq. ft. occupied?_____sq. ft.
Briefly describe the building(s)._____

_____

_____

III. Equipment* (nonexpendable)

Office Furniture: Average Age_____ Approximate total acquisition cost_____
Other: Average Age_____ Approximate total acquisition cost_____

IV. Miscellaneous

What was the FY 73 expenditures for supplies and expendable equipment?*
_____

What was the number of students passing through all courses administratively under this headquarters (FY 73)_____

What was the total number of student instructional man-hours for all courses administratively under this headquarters (FY 73)_____

List other expenses (with amounts) not covered above.*
Item_____ $_____
Item_____ $_____

*Include only data for headquarters office.

TAEG Report No. 22-1

NAVY/MARINE CORPS TRAINING COST ANALYSIS

COURSE DATA

Course Title_____

1. Location_____ Zip Code_____
2. School_____
3. Course length_____Weeks
4. Total student hours of instruction in course_____ Hours
5. Number of courses conducted each year_____Number
6. Maximum student capacity per course_____Number Per Year
7. Student input (FY 73)_____Number Per Year
8. Student output (FY 73)_____Number Per Year
9. Job title_____
10. MOS(s) supported_____

_____

Will the course data include a prorated share of all headquarters office expenses? (Yes____ No____)

If no, then indicate below the name of all headquarters which this course is administratively under. Starting with the school administration, list all in order of their position in the administrative hierarchy.

1.

2.

3.

4.

TAEG Report No. 22-1

PERSONNEL

Course Title_____

Personnel	Man Weeks	Average Grade	Miscellaneous Personnel Expenses
Instructors Officers			
Enlisted			
Civilian			
Administration and Instructional Support Officers			
Enlisted			
Civilian			

1. Instructors: Include those individuals who monitor, supervise, or teach in a classroom or laboratory situation. Include all their time except that spent in developing and revising course material.

2. Administration and Instructional Support: Include librarians, budget personnel, directors, clerks and typists, equipment operators, and all others not excluded by item 3 below.

3. Do not include in personnel data those individuals (a) performing maintenance on the facilities, (b) the time of individuals developing and updating course material, (c) those individuals who maintain and operate nonexpendable equipment.

4. Miscellaneous Personnel Expenses: Include TAD, travel, etc. DO NOT include salary, wages, or personnel overhead charges such as retirement costs, housing costs, etc.

5. Where data must be prorated do so on the basis of student instructional hours.

TAEG Report No. 22-1

FACILITIES (INDOOR)

Course Title_____

Space	Sq Ft	Age Yrs	Good Fair Poor	Brick Block Frame Steel
Laboratory				
Classroom				
Instructional Support				
Offices				
Other				
Total				

1. Do not include space and equipment devoted to development and updating of instructional material. These data will be included on a following form.

2. If any space is used by more than one course or used in support of more than one course then prorate to this course a proportion equal to the student man-hours of instruction for the course divided by the total of all student man-hours of instruction supported by the facility.

3. Include only those facilities which are used by the school for instruction or in support of the school. Do not go beyond the school administration. DO NOT include mess halls, barracks, dispensaries, recreational areas, and clubs.

4. In "Other" include a prorated share of hallways, heads, supply lockers, lounges, etc.

TAEG Report No. 22-1

OUTDOOR TRAINING AREAS

Course Title_____

Area	Acres	Current Value of Land
Outdoor Training Areas		
Other		

1. Estimate on the basis of current local nonmilitary land values.

2. If area is used by more than one course or for other purposes, then prorate the area on the basis of total use.
   Example: A 10-acre tract used equally for a training area for heavy equipment operators and a surveying course would be prorated by assigning 5 acres to each course.

EQUIPMENT (NONEXPENDABLE)

Course Title_____

Equipment	Total New Cost	Normal Life	Yearly Maint.	Current Salvage Value
Operational Equipment* Used in Training				
Tools and Test Equipment				
Simulators				
Procedure Trainers				
Component Parts				
Student Carrels				
Models & Mockups				
Audio-Visual Equip.				
Office Equipment				
Classroom Furniture				
Other				

*Is the operation equipment used for training still in the inventory of the operational forces? Yes___ No___

1. You may group minor equipment items and present "average" life data.
2. If any equipment is used by more than one course or in support of more than one course, then prorate a proportion of the value to this course equal to the student man-hours of instruction for the course divided by the total of all instructional hours supported.
3. In yearly overhead and maintenance costs, include all material and personnel costs. Add ____ percent to military personnel wages and salaries for personnel overhead. Add ____ percent to civilian wages and salaries for personnel overhead.
4. Audio-visual equipment includes only the hardware and not the courseware.
5. Estimate current salvage value on the basis of potential value in the market economy.

TAEG Report No. 22-1

STUDENTS

Course Title_____

Expenditure Class	Expenditures/Yr (All Students)
Wages and Salaries	
Travel and Temporary Duty Allowance[1]	
Subsistence	
Other	

[1] Include only travel and temporary duty allowance incurred as part of the course.

SUPPLIES & EQUIPMENT (EXPENDABLE)

Course Title_____

Type	Total Expenditures Per Yr (FY 73)
Office Supplies	
Instruction Supplies	
Student Supplies	
Other	

1. Prorate according to student instructional hours where necessary.
2. Instruction supplies include reproduction costs and/or copy costs of films, textbooks, lab manuals, etc. DO NOT include development and updating costs.

DEVELOPMENT OF INSTRUCTION MATERIAL

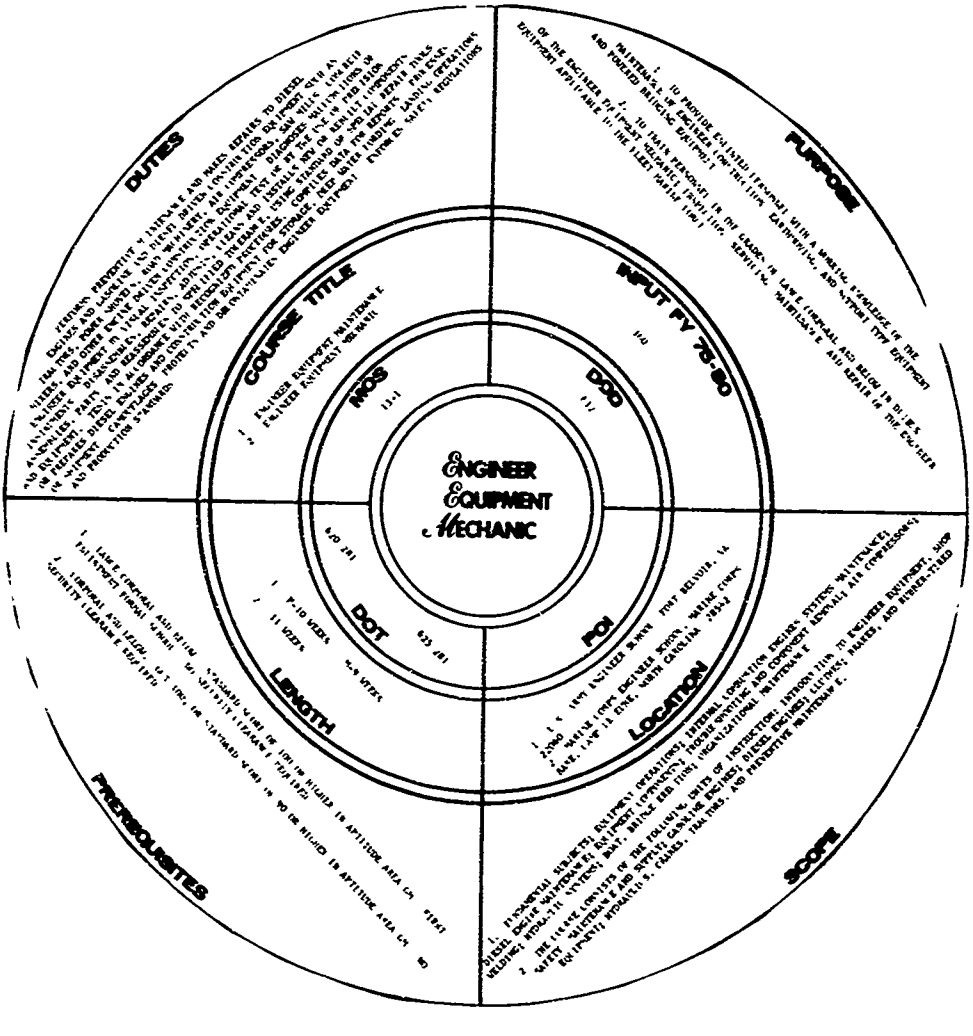
Course Title_____

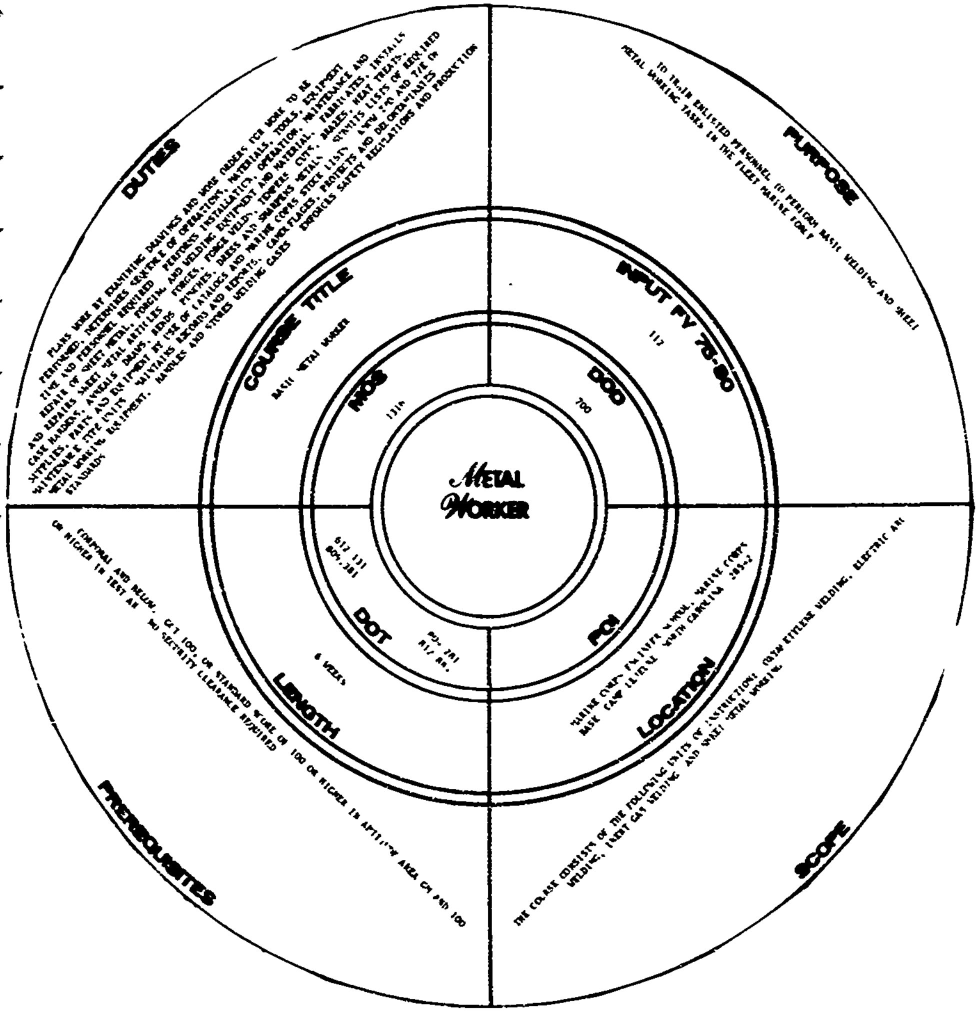
Type of Material (Courseware)	Hours of Instructional Use for Which Development Costs are Incurred	Development Costs Per Hour of Instructional Use		Life Expectancy	Annual Update Cost
		Man Hours	Dollars		
Lesson Plans					
Textbooks					
Lab Manuals					
Films					
Sound Slide Programs					
CAI Software					
TV & Radio Scripts					
Handouts					
Transparencies (10 x 10)					
Programmed Instruction Lessons					
Tests					

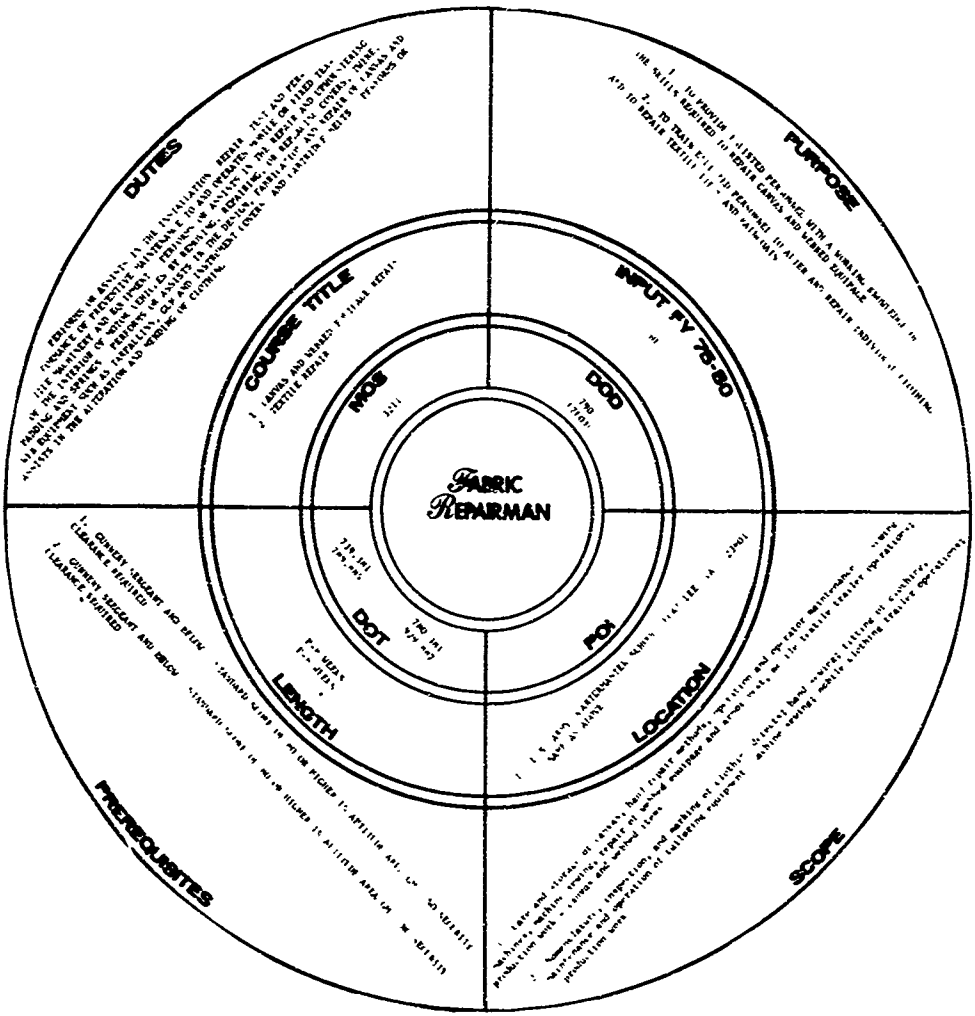
Comments:

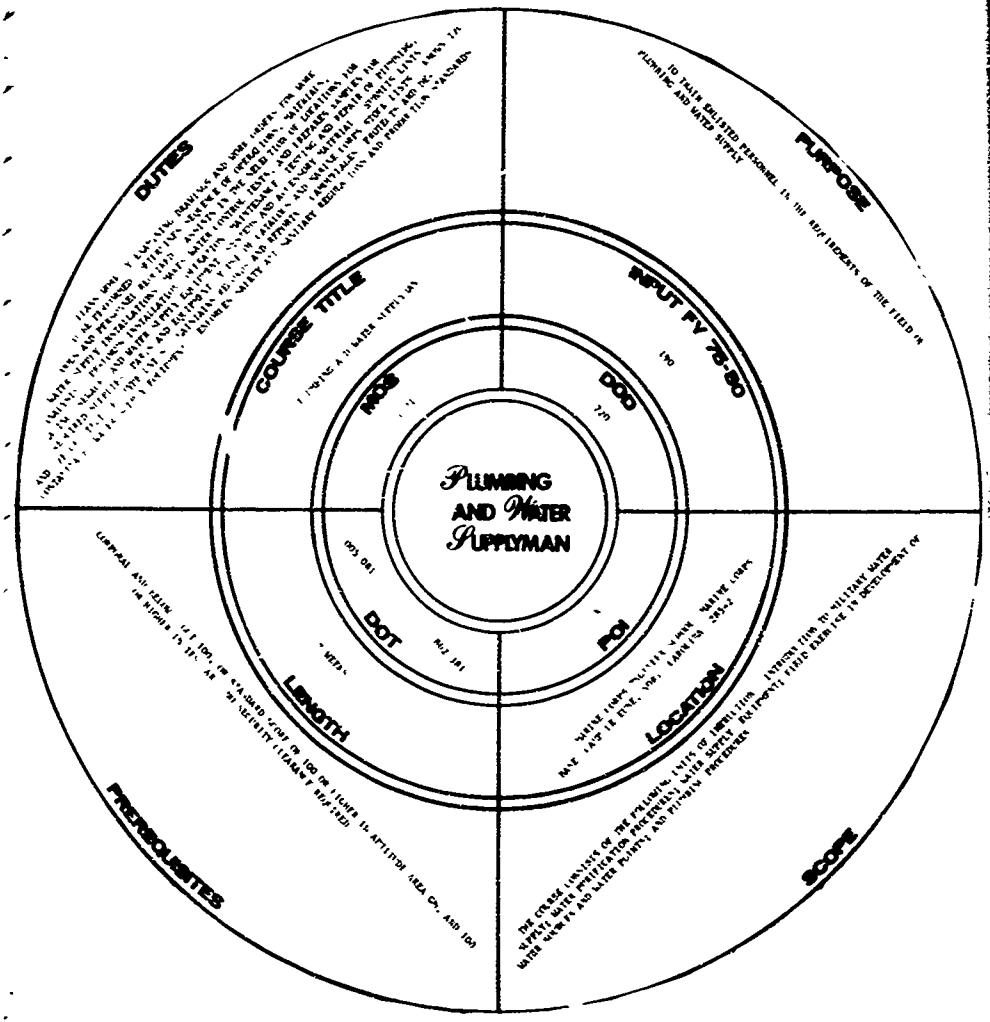
APPENDIX E

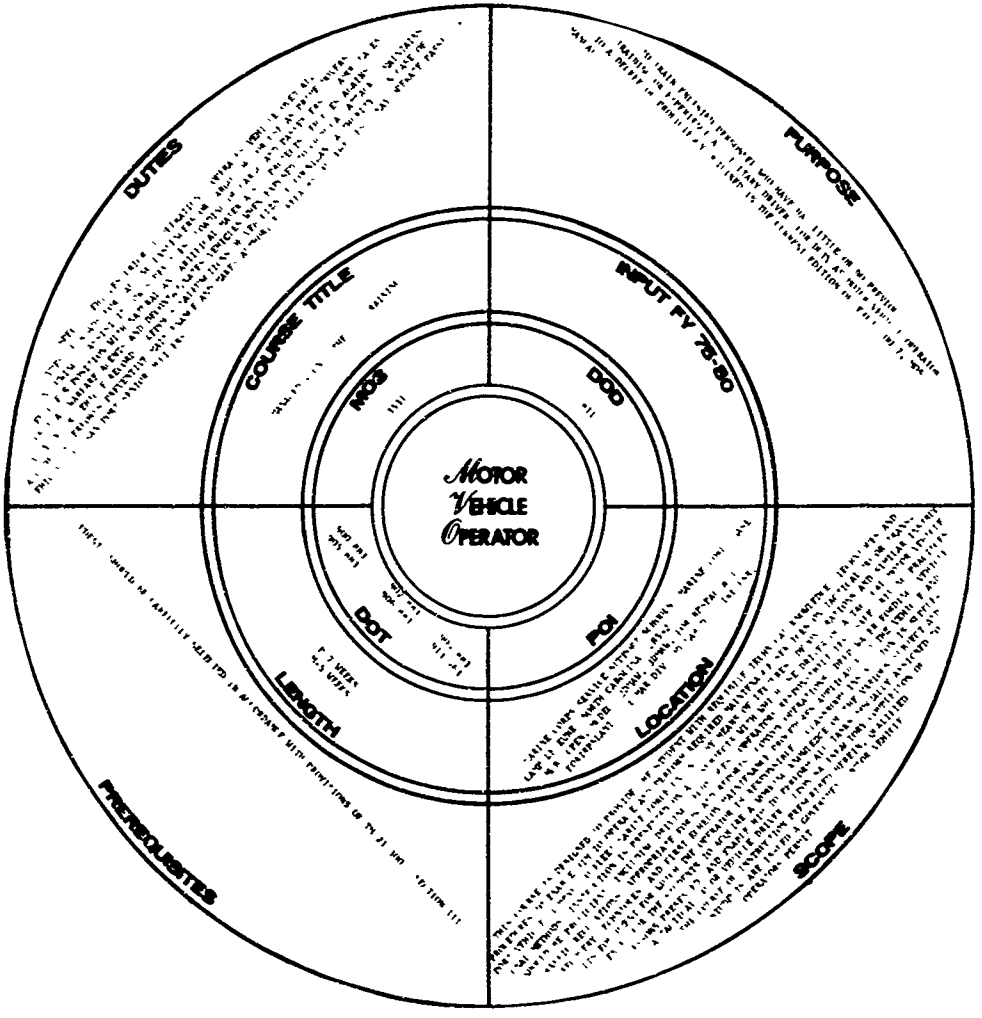
MOS SKILL TRAINING CHARTS

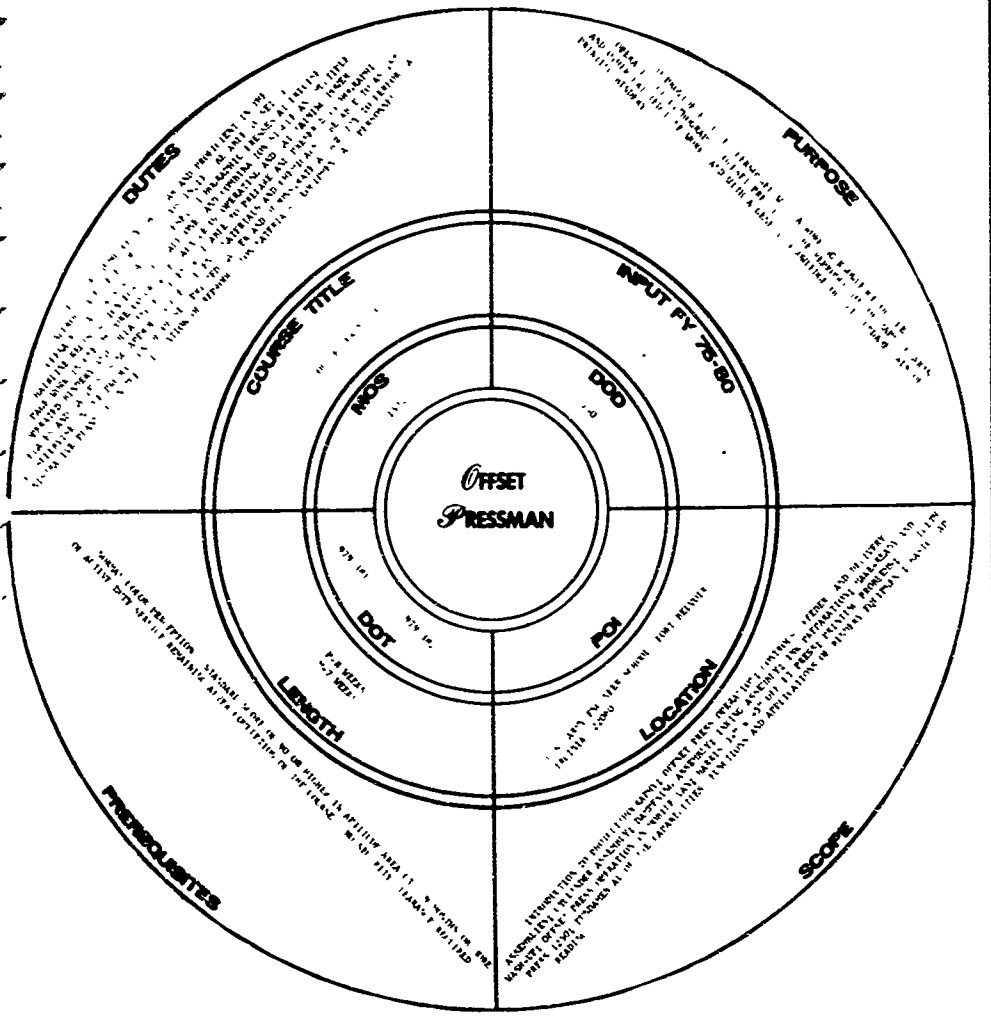

ENGINEER
EQUIPMENT
MECHANIC
COURSE TITLE
INPUT FY 75-80
LENGTH
LOCATION
PREREQUISITES
SCOPE
DUTIES
PURPOSE
INOS
DOD
DOT
POI

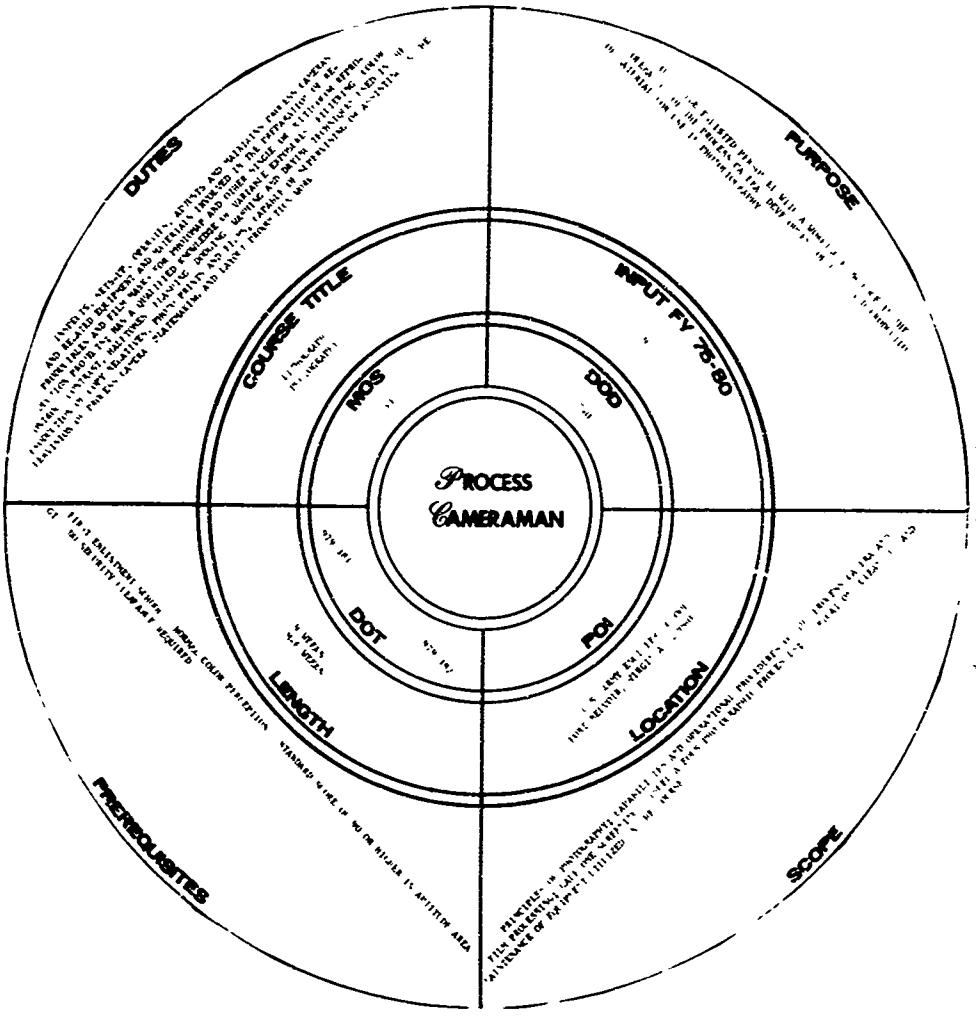

METAL WORKER
DUTIES
PURPOSE
TO TRAIN ENLISTED PERSONNEL TO PERFORM BASIC WELDING AND SHEET METAL WORKING TASKS IN THE FLEET MARINE FORCE
COURSE TITLE
BASIC METAL WORKER
INPUT FY 79-80
MOS
DOO
700
DOT
PCI
LENGTH
6 WEEKS
LOCATION
PREREQUISITES
SCOPE

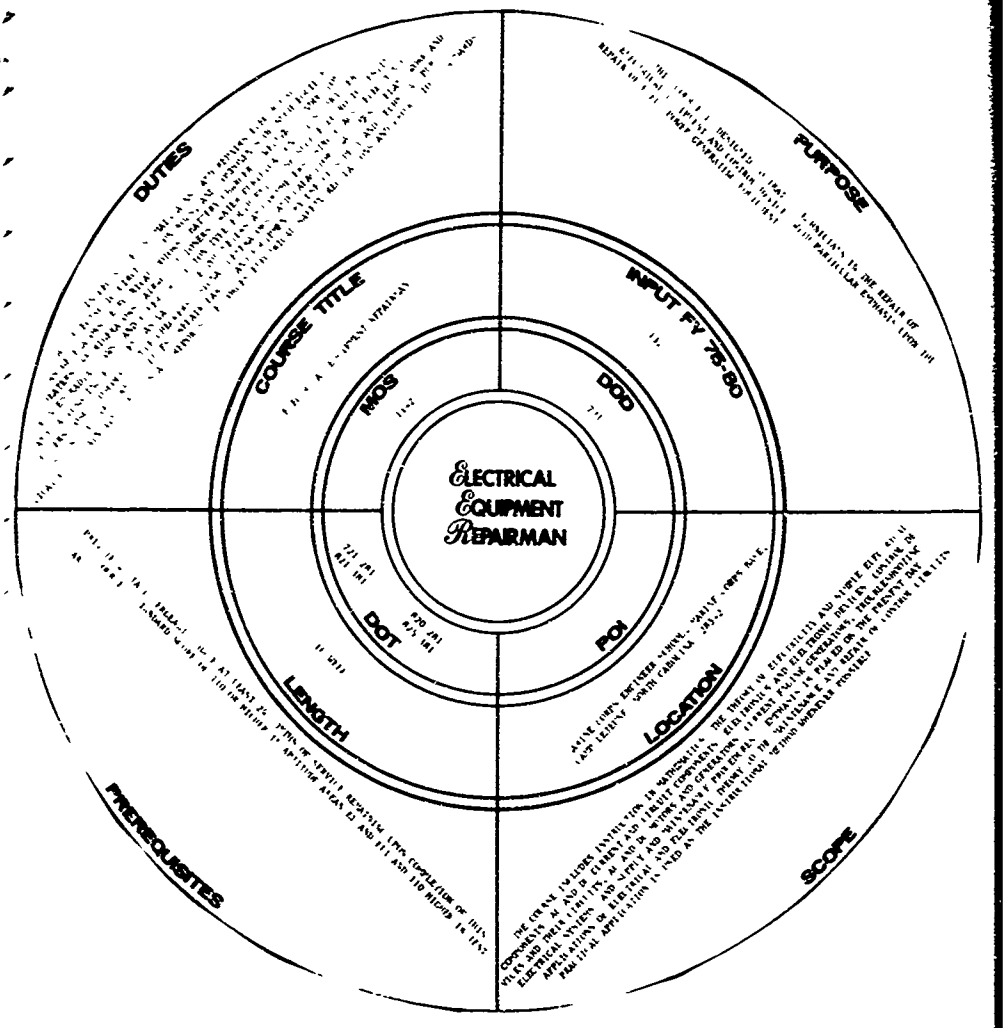

DUTIES
PURPOSE
COURSE TITLE
INPUT FY 78-80
MOS
DOD
FABRIC
REPAIRMAN
DOT
POI
LENGTH
LOCATION
PREREQUISITES
SCOPE

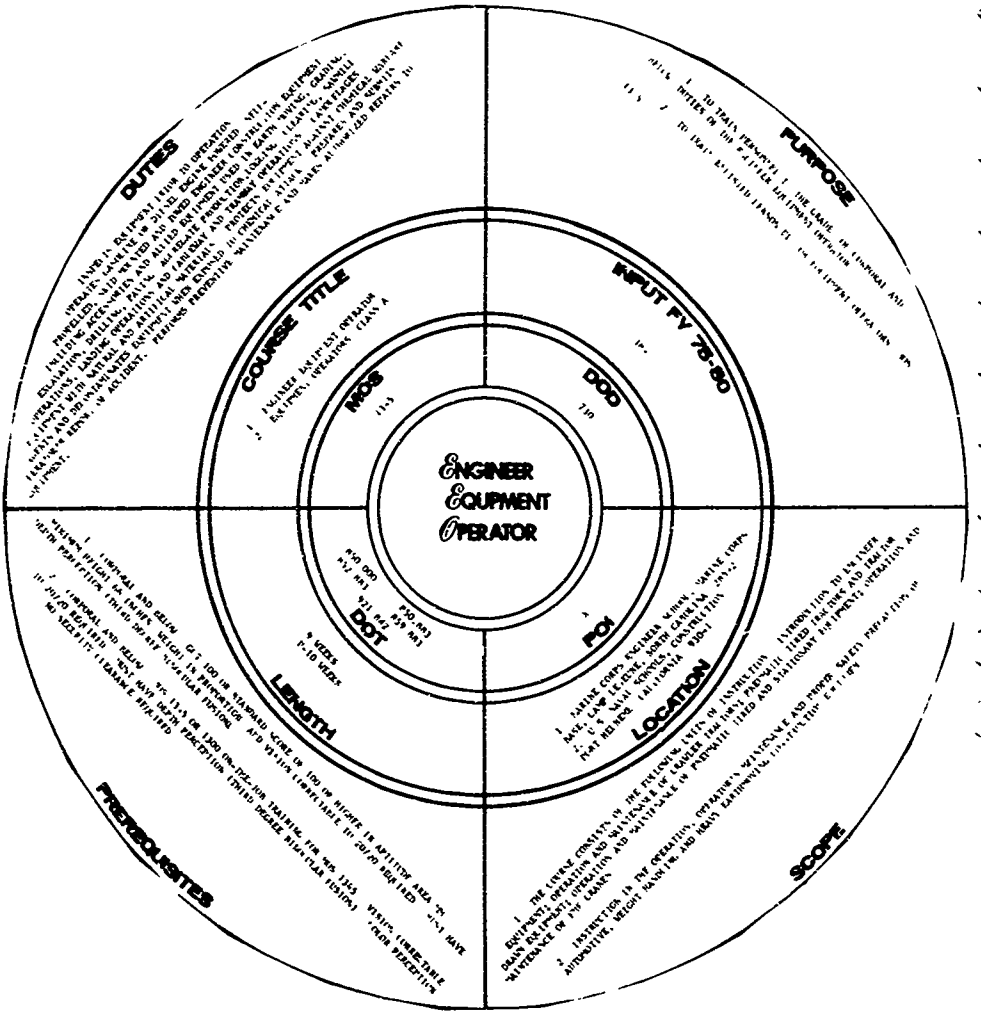

PLUMBING AND WATER SUPPLYMAN
COURSE TITLE
INPUT FY 78-80
MOS
DOD
DOT
POI
DUTIES
PURPOSE
LENGTH
LOCATION
PREREQUISITES
SCOPE

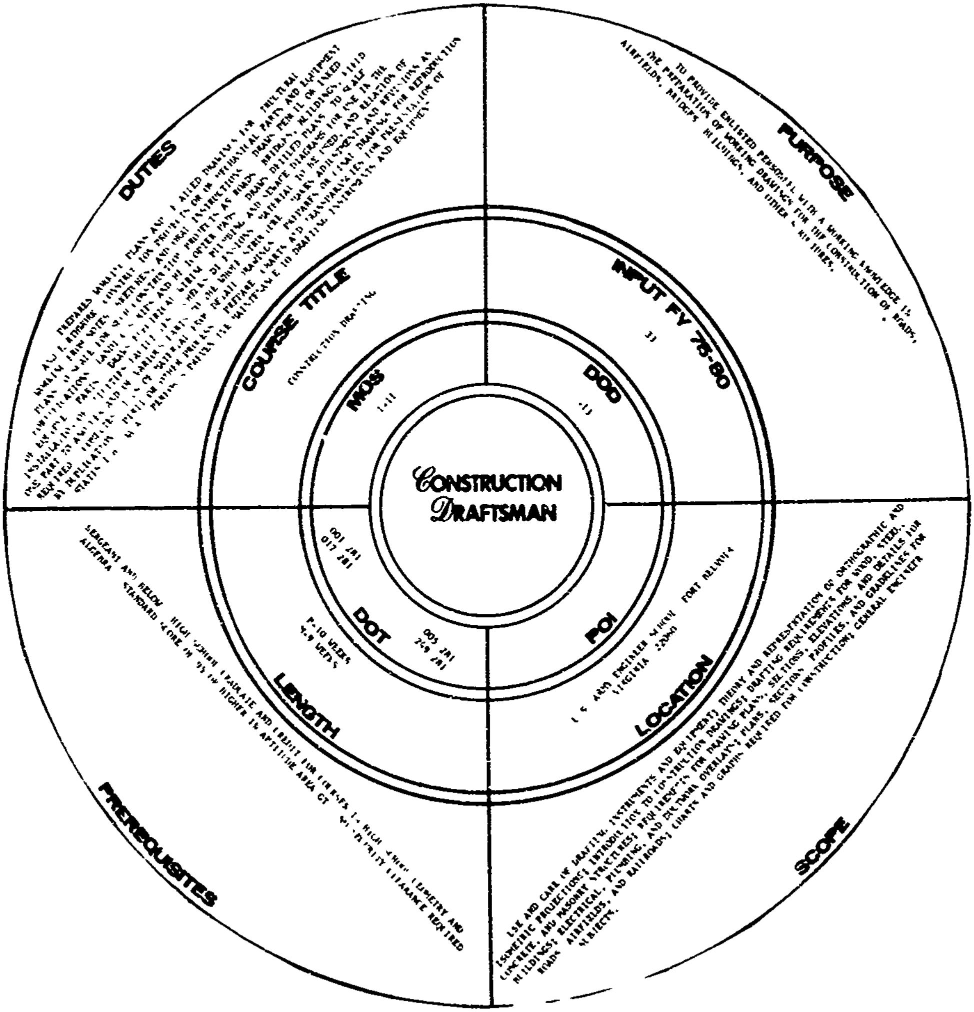

DUTIES
PURPOSE
INPUT FY 78-80
COURSE TITLE
MOS
DOD
MOTOR
VEHICLE
OPERATOR
DOT
POI
LENGTH
LOCATION
PREREQUISITES
SCOPE

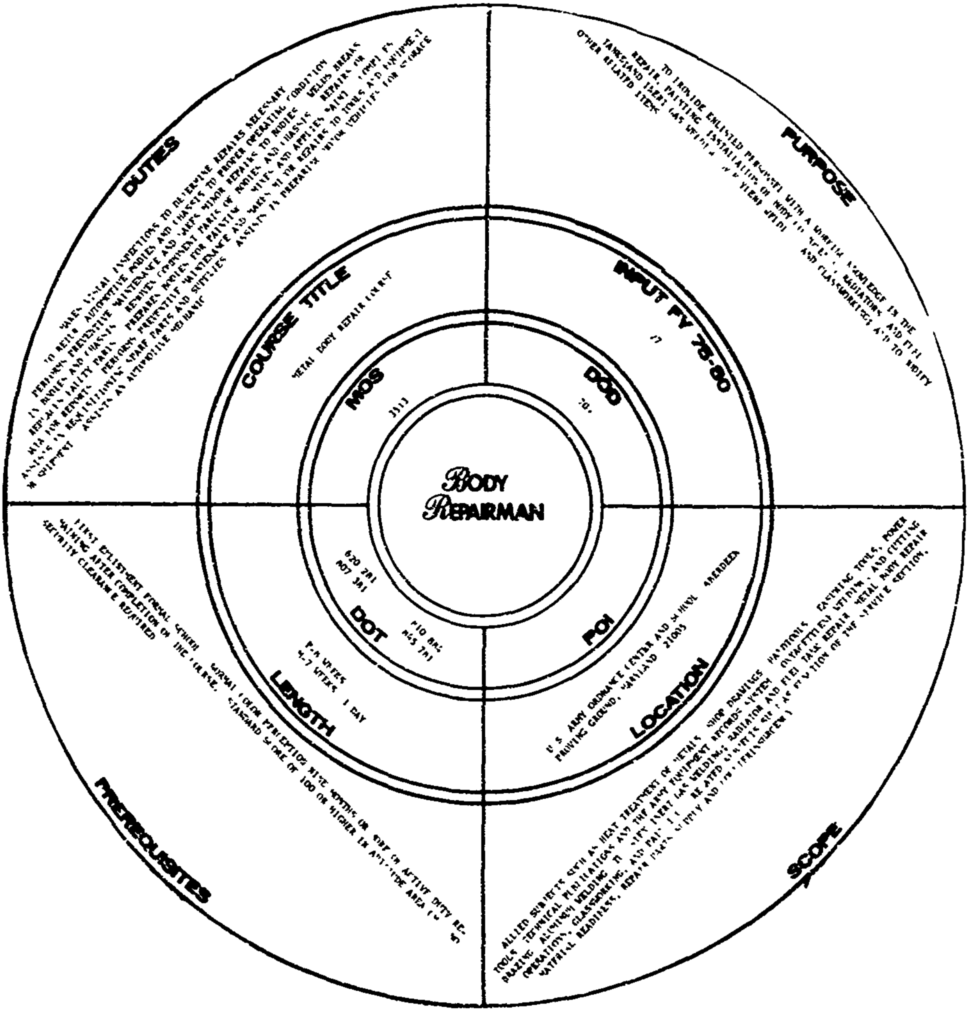

OFFSET
PRESSMAN
COURSE TITLE
INPUT FY 76-80
NROS
DOD
DOT
POI
LENGTH
LOCATION
PURPOSE
SCOPE
PREREQUISITES
OUTES

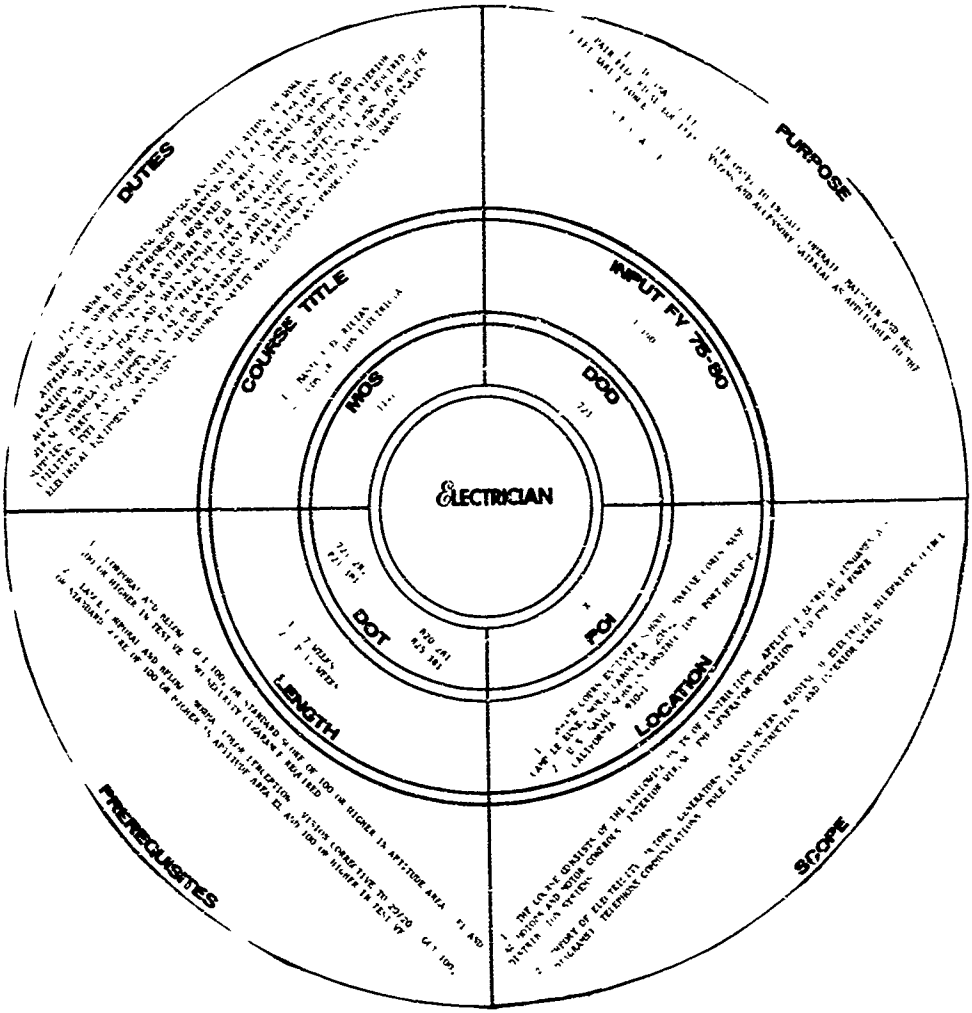

DUTIES
PURPOSE
PREREQUISITES
SCOPE
COURSE TITLE
INPUT FY 75-80
MOS
DOD
DOT
POI
LENGTH
LOCATION
PROCESS CAMERAMAN


DUTIES
PURPOSE
COURSE TITLE
INPUT FY 75-80
MOS
DOD
ELECTRICAL EQUIPMENT REPAIRMAN
DOT
POI
LENGTH
LOCATION
PREREQUISITES
SCOPE


ENGINEER
EQUIPMENT
OPERATOR
COURSE TITLE
MOS
DOD
DOT
POI
INPUT FY 78-80
PURPOSE
DUTIES
LOCATION
LENGTH
PREREQUISITES
SCOPE


CONSTRUCTION DRAFTSMAN
DUTIES
PURPOSE
COURSE TITLE
INPUT FY 76-80
MOS
DOD
DOT
POI
LENGTH
LOCATION
PREREQUISITES
SCOPE


DUTIES
PURPOSE
COURSE TITLE
METAL BODY REPAIR COURSE
INPUT FY
MOS
DOD
BODY
REPAIRMAN
DOT
POI
LENGTH
LOCATION
U.S. ARMY ORDNANCE CENTER AND SCHOOL, ABERDEEN PROVING GROUND, MARYLAND 21005
PREREQUISITES
SCOPE


DUTIES
PURPOSE
PREREQUISITES
SCOPE
COURSE TITLE
INPUT FY 75-80
MOS
DOD
DOT
POI
LENGTH
LOCATION
ELECTRICIAN

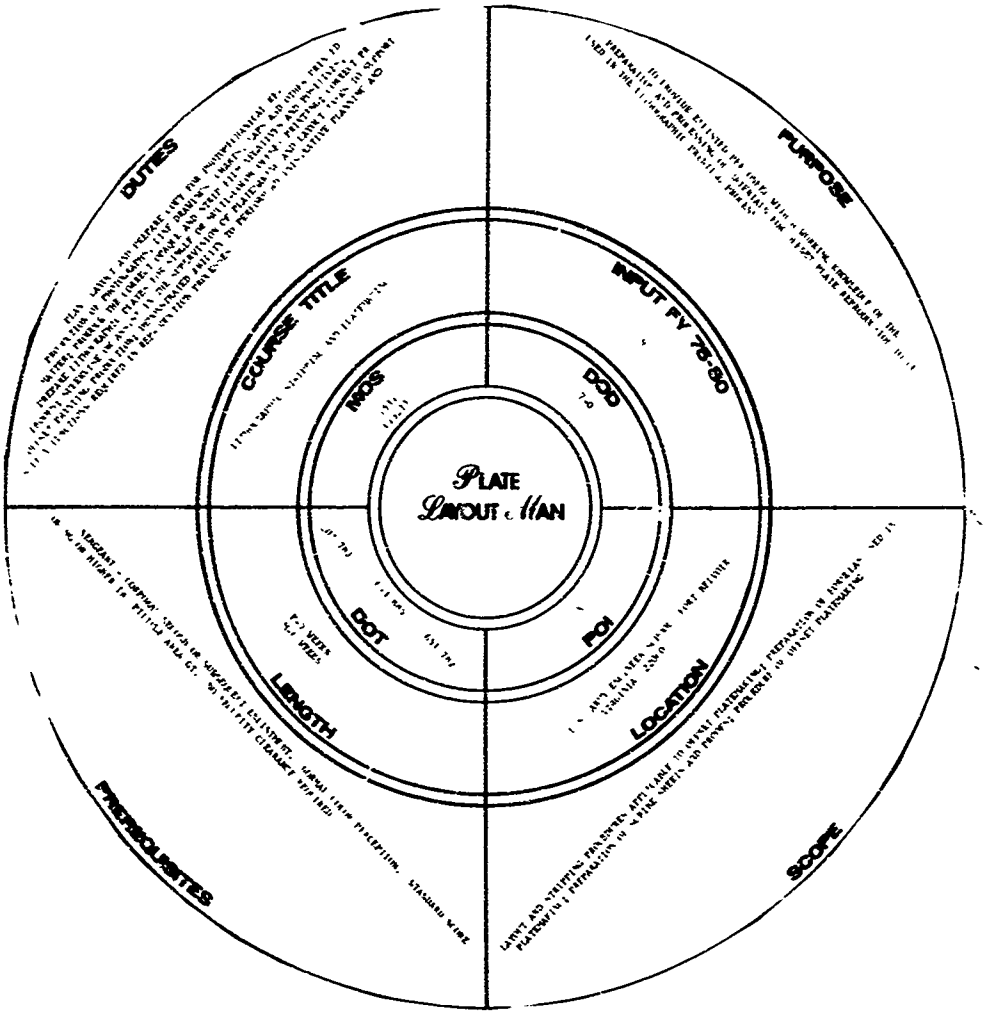
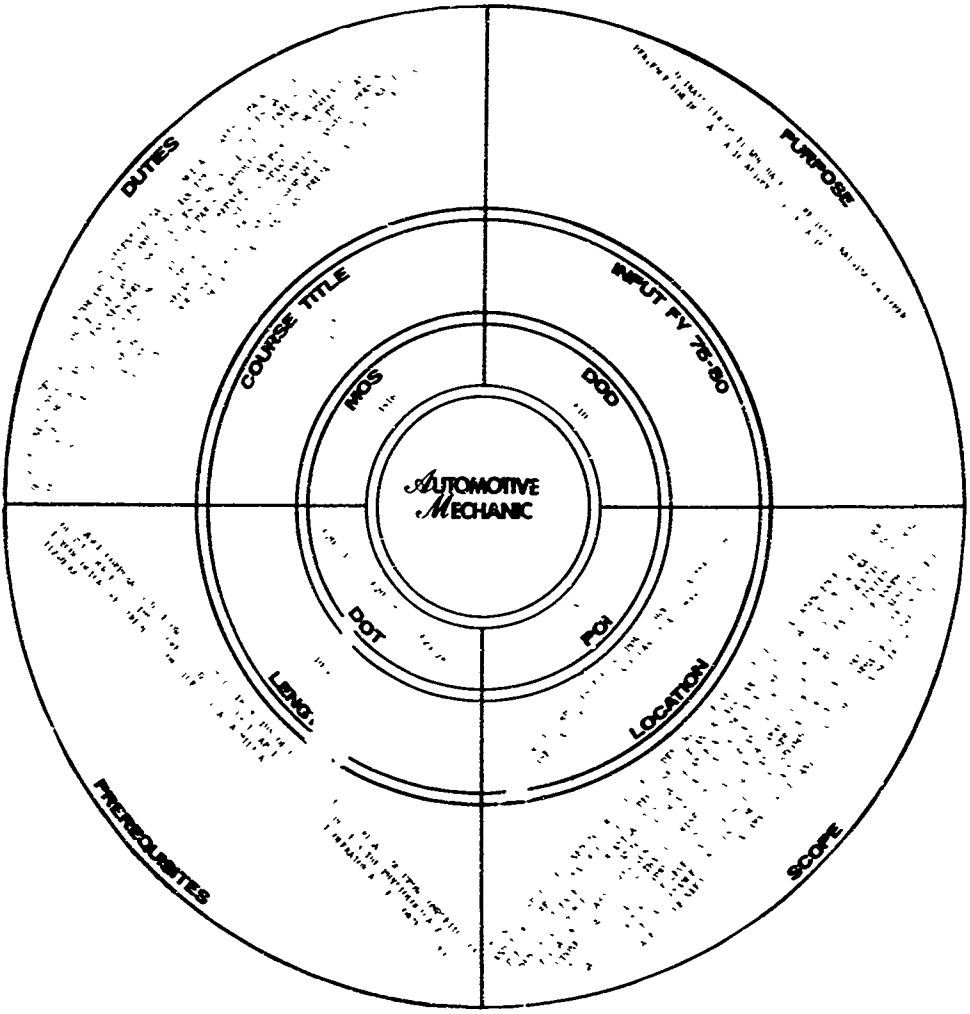
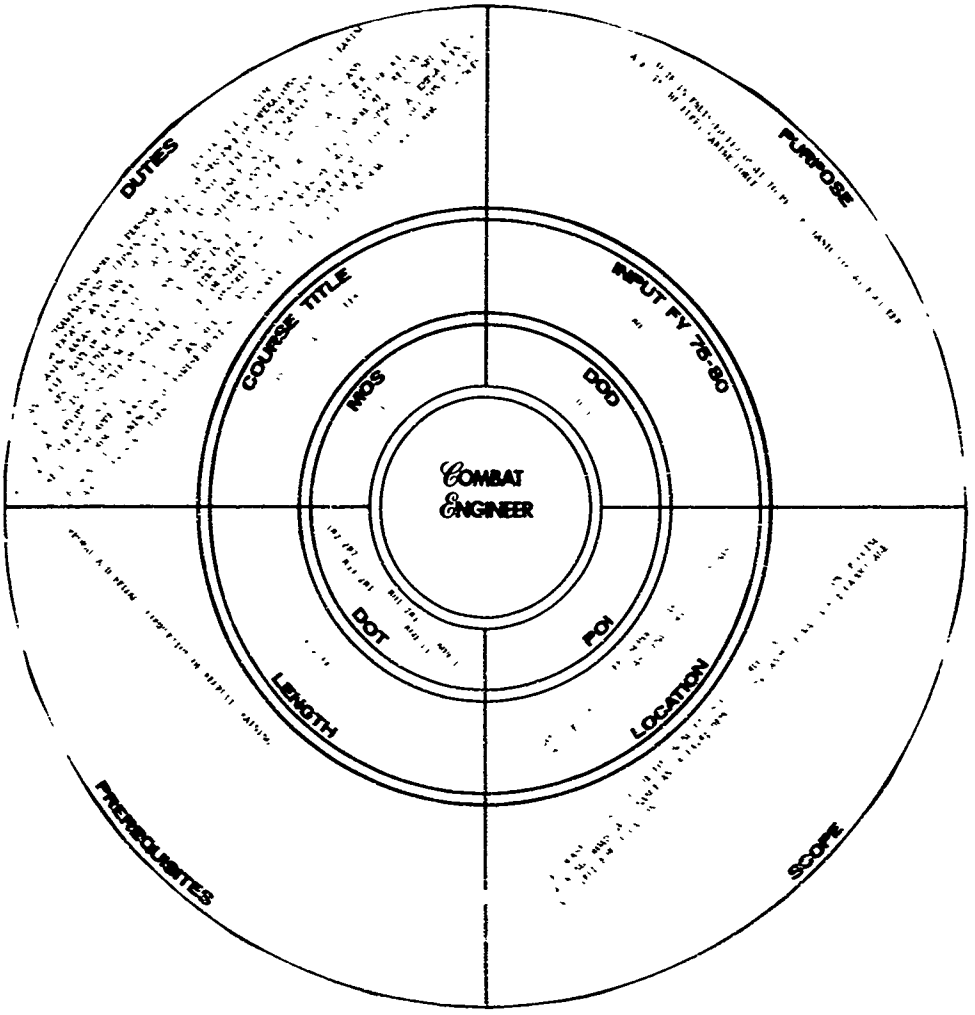
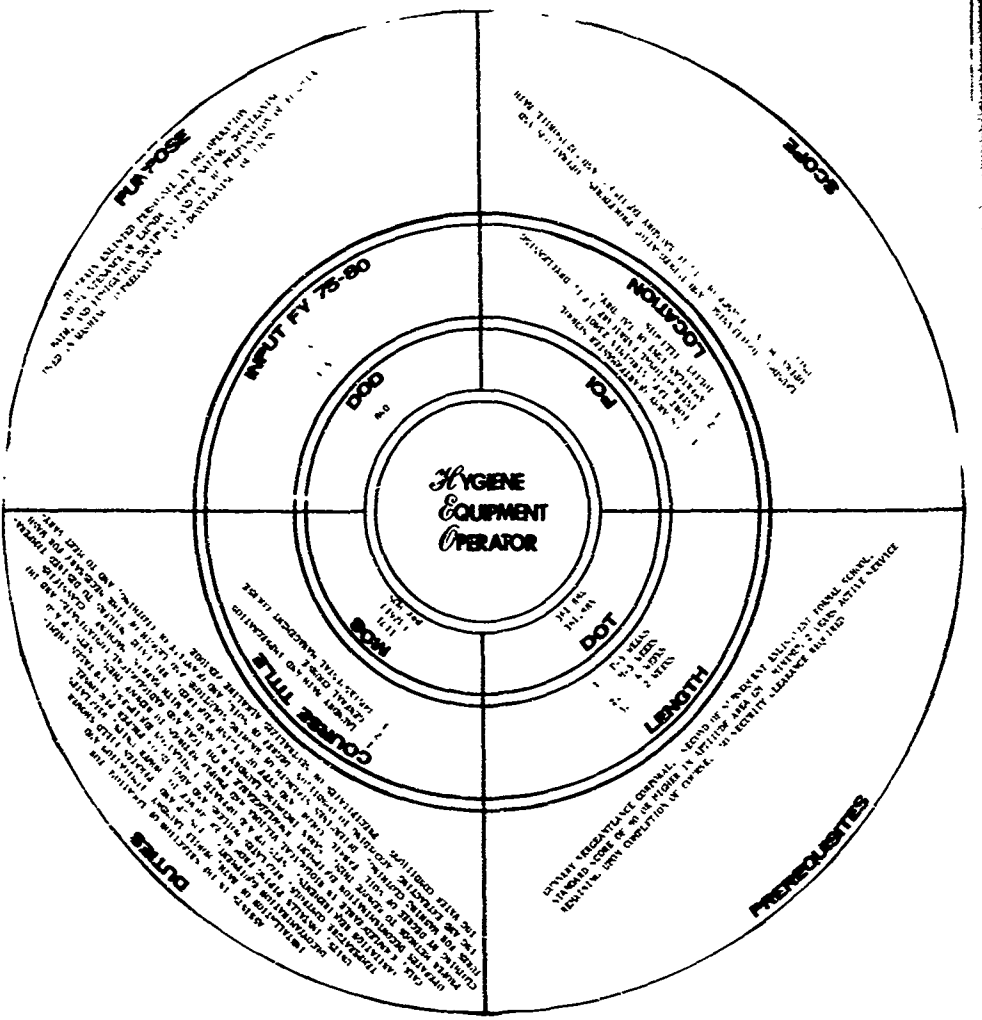
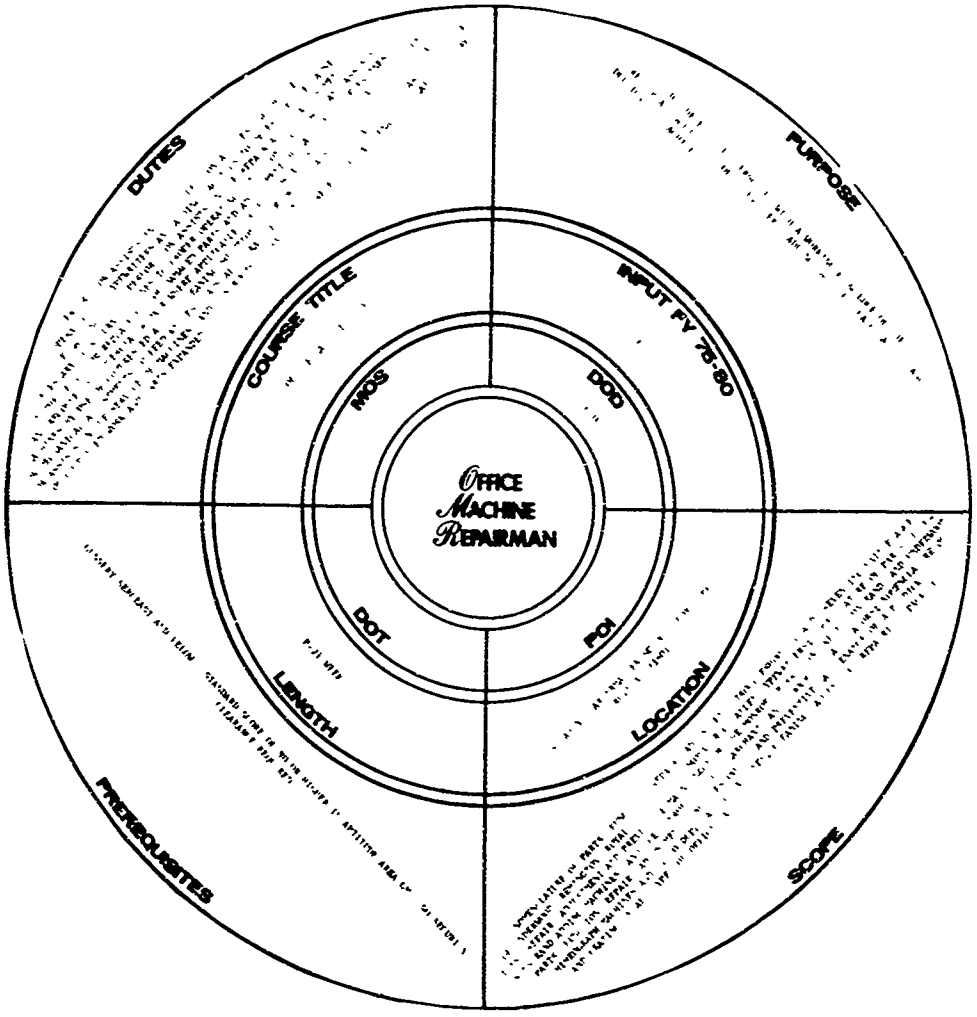


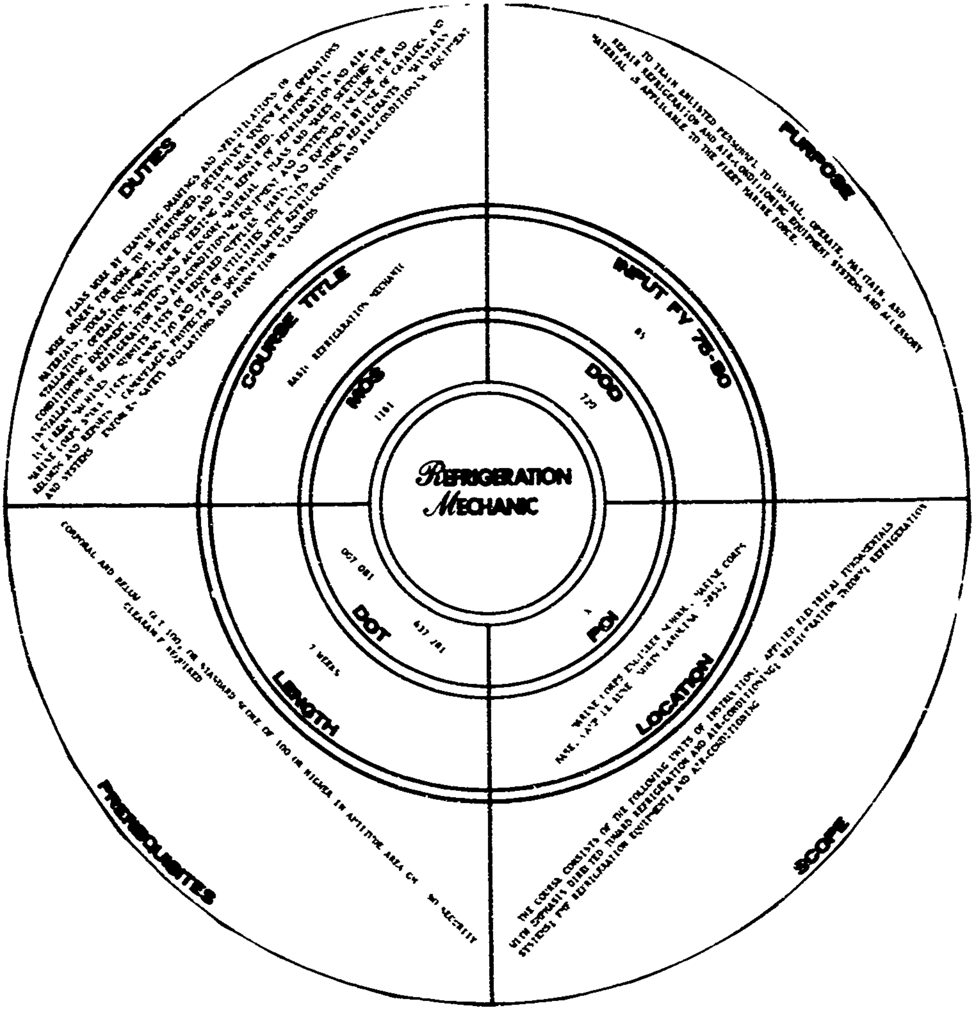
PLATE
LAYOUT MAN
COURSE TITLE
MOS
DOD
INPUT FY 78-80
DOT
POI
LENGTH
LOCATION
DUTES
PURPOSE
PREREQUISITES
SCOPE

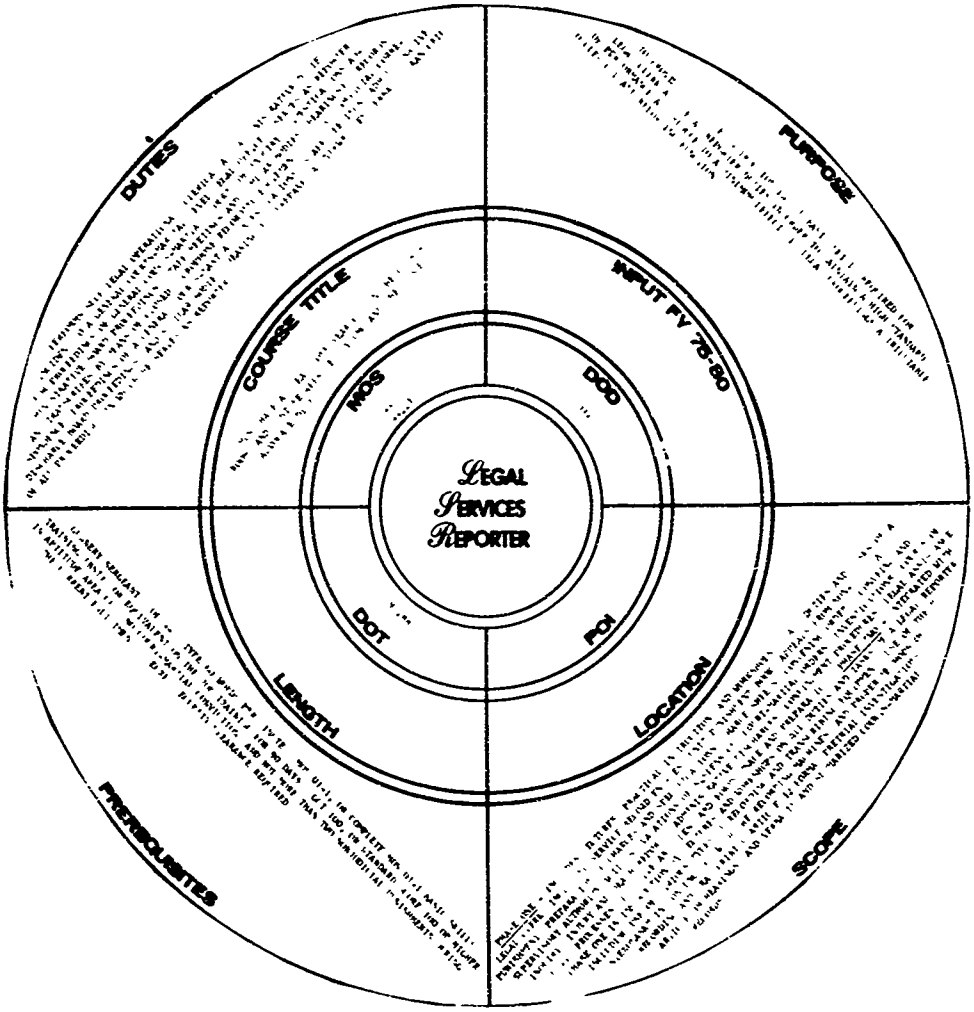

DUTIES
PURPOSE
COURSE TITLE
INPUT FY 78-80
MOS
DOD
AUTOMOTIVE MECHANIC
DOT
POI
LENGTH
LOCATION
PREREQUISITES
SCOPE


COMBAT ENGINEER
COURSE TITLE
INPUT FY 78-80
MOS
DOD
DOT
POI
LENGTH
LOCATION
DUTIES
PURPOSE
PREREQUISITES
SCOPE


HYGIENE
EQUIPMENT
OPERATOR
DOD
POI
DOT
MOS
INPUT FY 75-80
LOCATION
LENGTH
COURSE TITLE
DUTIES
PREREQUISITES
PURPOSE
SCOPE


DUTIES
PURPOSE
SCOPE
LOCATION
LENGTH
PREREQUISITES
COURSE TITLE
MOS
DOD
INPUT FY 78-80
DOT
PCN
OFFICE MACHINE REPAIRMAN


REFRIGERATION MECHANIC
DUTIES
PURPOSE
TO TRAIN ENLISTED PERSONNEL TO INSTALL, OPERATE, MAINTAIN, AND REPAIR REFRIGERATION AND AIR-CONDITIONING EQUIPMENT SYSTEMS AND ACCESSORY MATERIAL AS APPLICABLE TO THE FLEET MARINE FORCE.
COURSE TITLE
BASIC REFRIGERATION MECHANIC
INPUT FY 79-80
MOS
1181
DOD
DOT
POI
LENGTH
7 WEEKS
LOCATION
MARINE CORPS ENGINEER SCHOOL, MARINE CORPS BASE, CAMP LE JEUNE, NORTH CAROLINA 28542
PREREQUISITES
CORPORAL AND BELOW. GT 100 OR STANDARD SCORE OF 100 OR HIGHER IN APTITUDE AREA GM. NO SECURITY CLEARANCE REQUIRED
SCOPE


DUTIES
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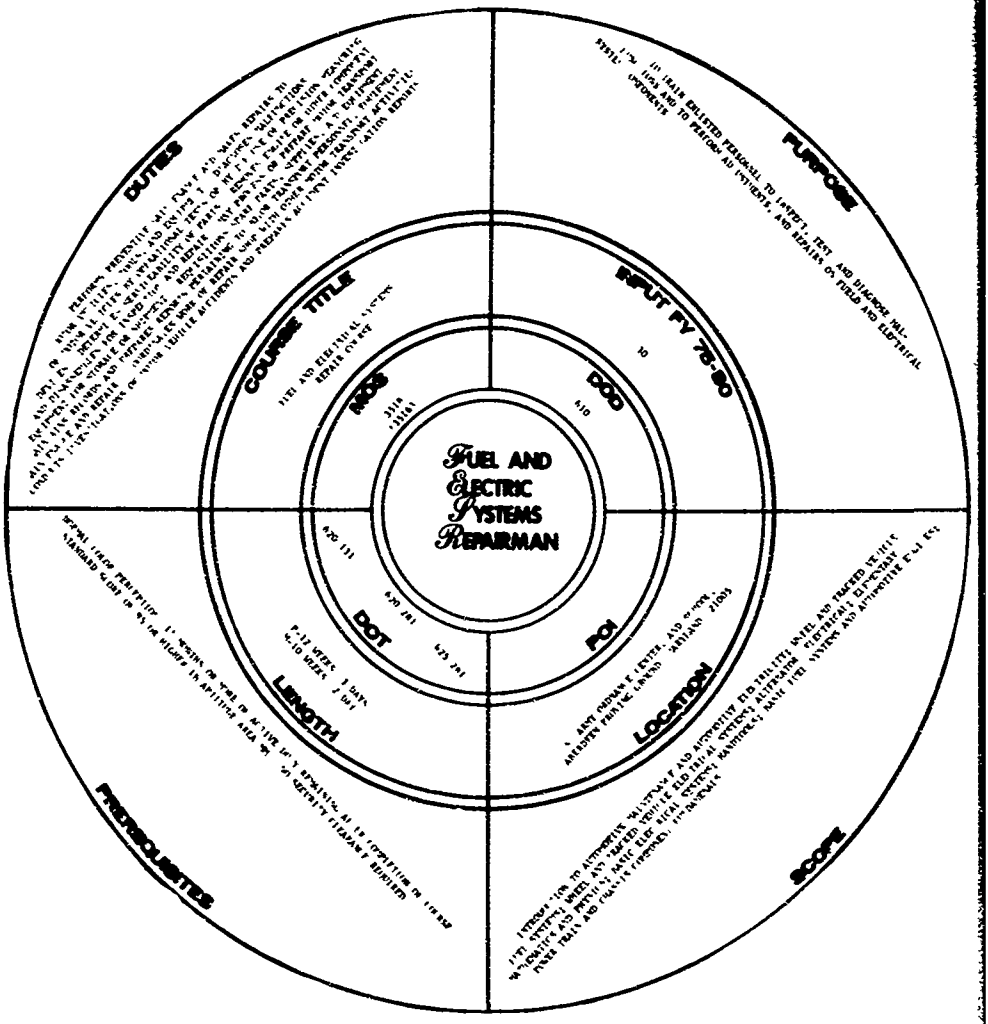
PREREQUISITES
SCOPE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SCOPE
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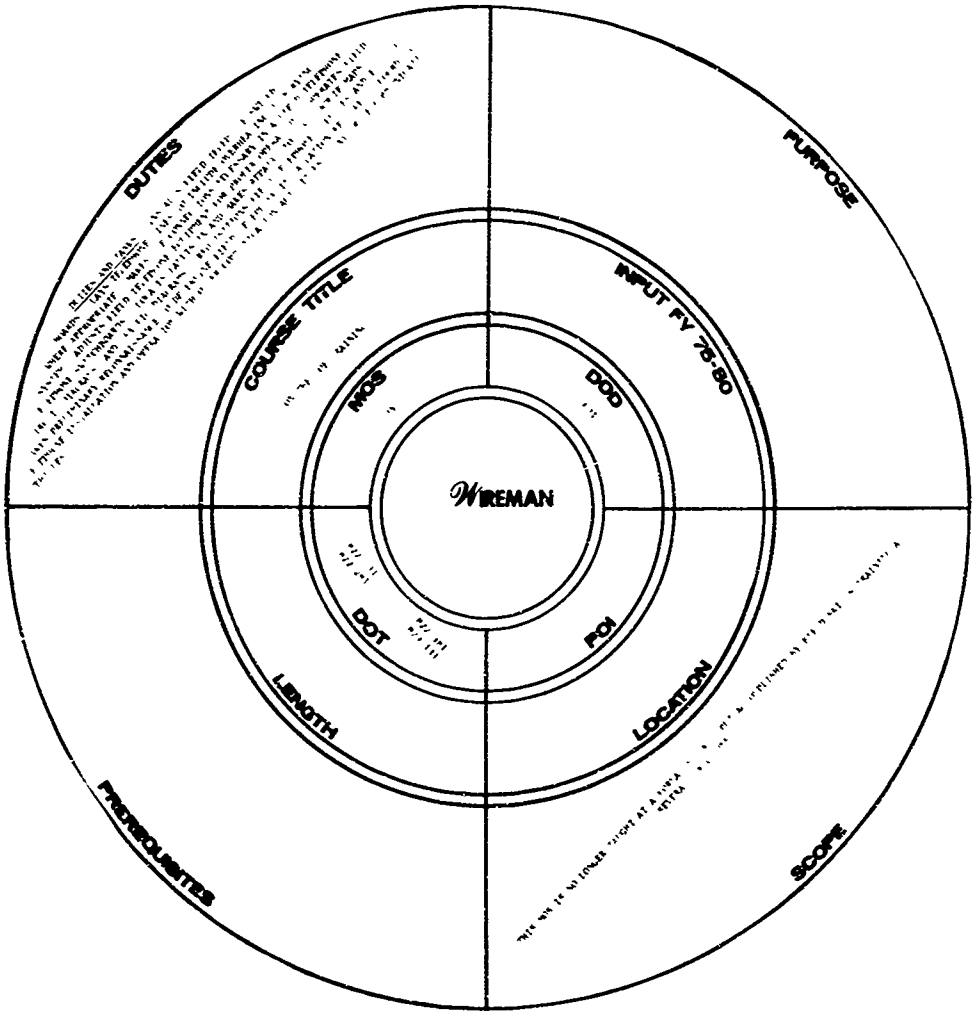
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WIREMAN
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FOI
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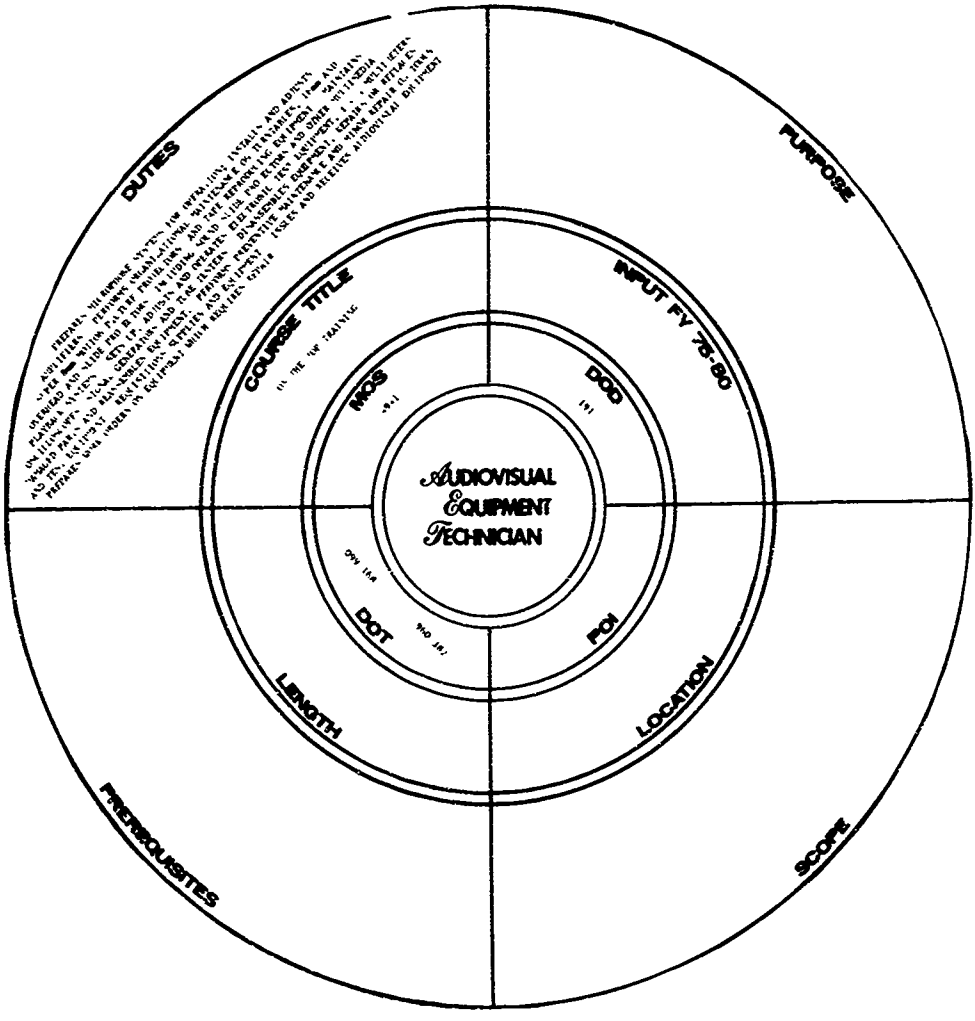
PREREQUISITES
SCOPE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PURPOSE
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COURSE TITLE
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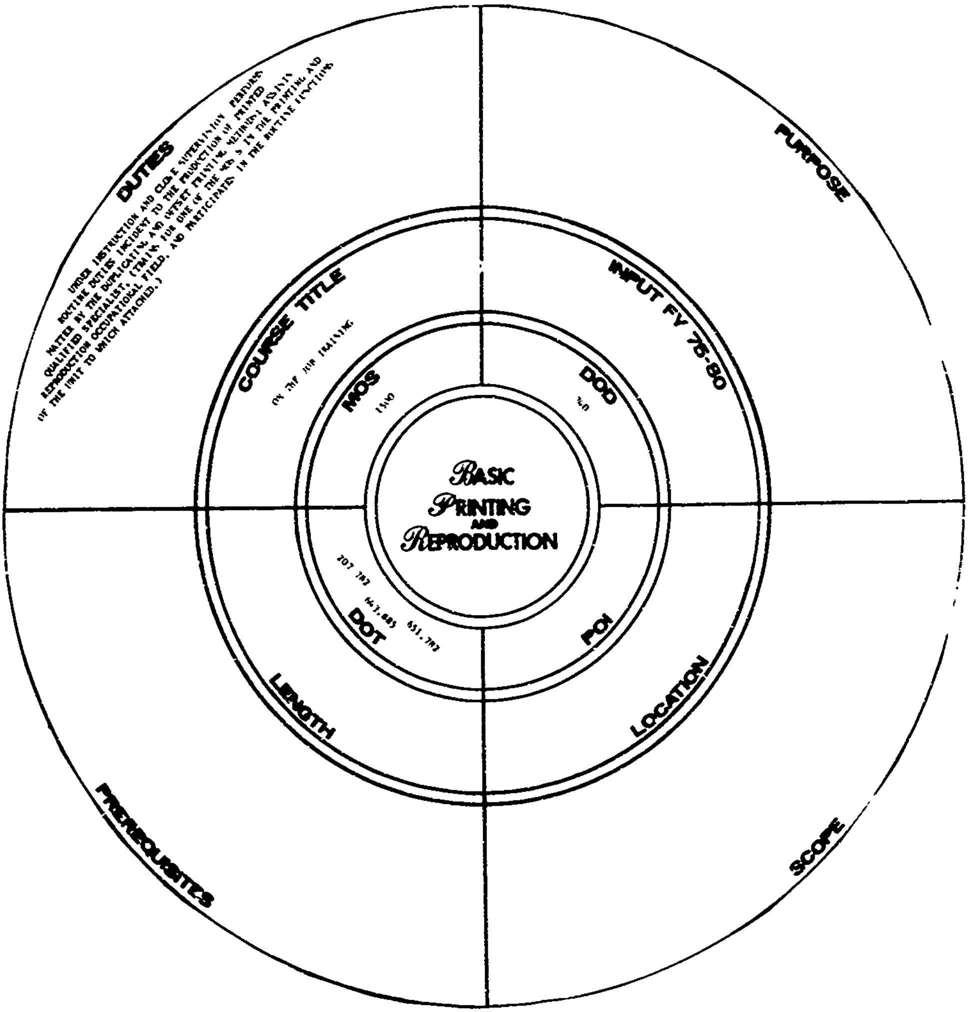
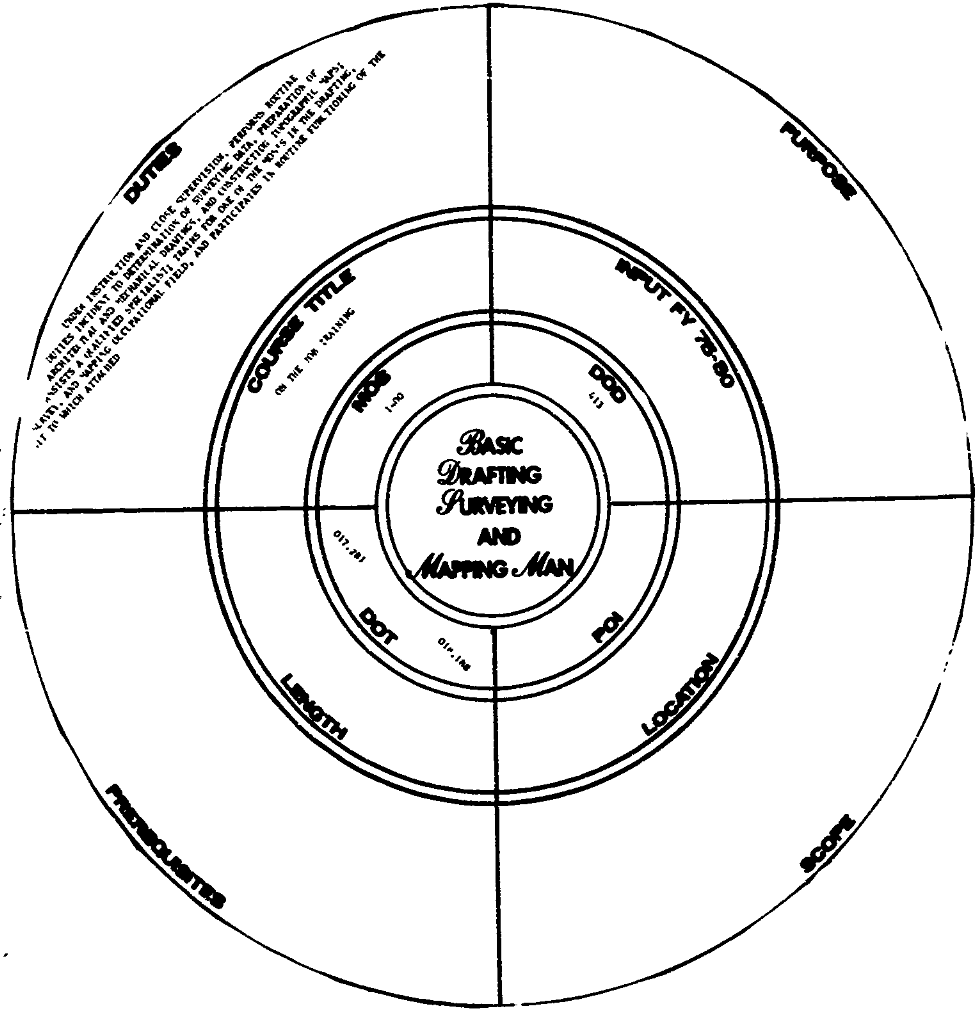
DOD
AUDIOVISUAL EQUIPMENT TECHNICIAN
DOT
PCN
LENGTH
LOCATION
PREREQUISITES
SCOPE


DUTIES
UNDER INSTRUCTION AND CLOSE SUPERVISION PERFORMS
ROUTINE DUTIES INCIDENT TO THE PRODUCTION OF PRINTED
MATTER BY THE DUPLICATING AND OFFSET PRINTING METHODS. ASSISTS
QUALIFIED SPECIALIST. (TRAINS FOR ONE OF THE MOS'S IN THE PRINTING AND
REPRODUCTION OCCUPATIONAL FIELD, AND PARTICIPATES IN THE ROUTINE FUNCTIONS
OF THE UNIT TO WHICH ATTACHED.)
PURPOSE
COURSE TITLE
ON THE JOB TRAINING
INPUT FY 75-80
MOS
DOD
BASIC PRINTING AND REPRODUCTION
DOT
POI
LENGTH
LOCATION
PREREQUISITES
SCOPE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PURPOSE
COURSE TITLE
ON THE JOB TRAINING
INPUT FY 79-80
MOS
DOD
BASIC DRAFTING SURVEYING AND MAPPING MAN
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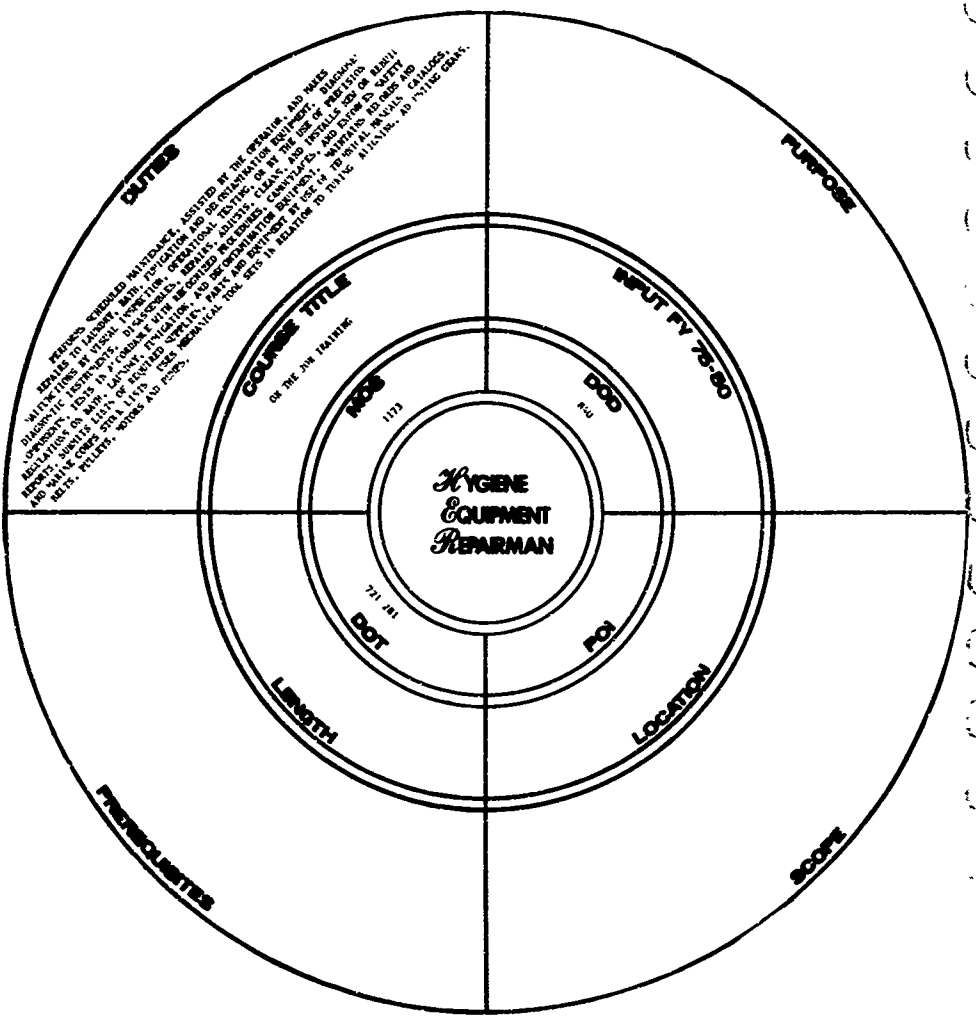
POI
LENGTH
LOCATION
PREREQUISITES
SCOPE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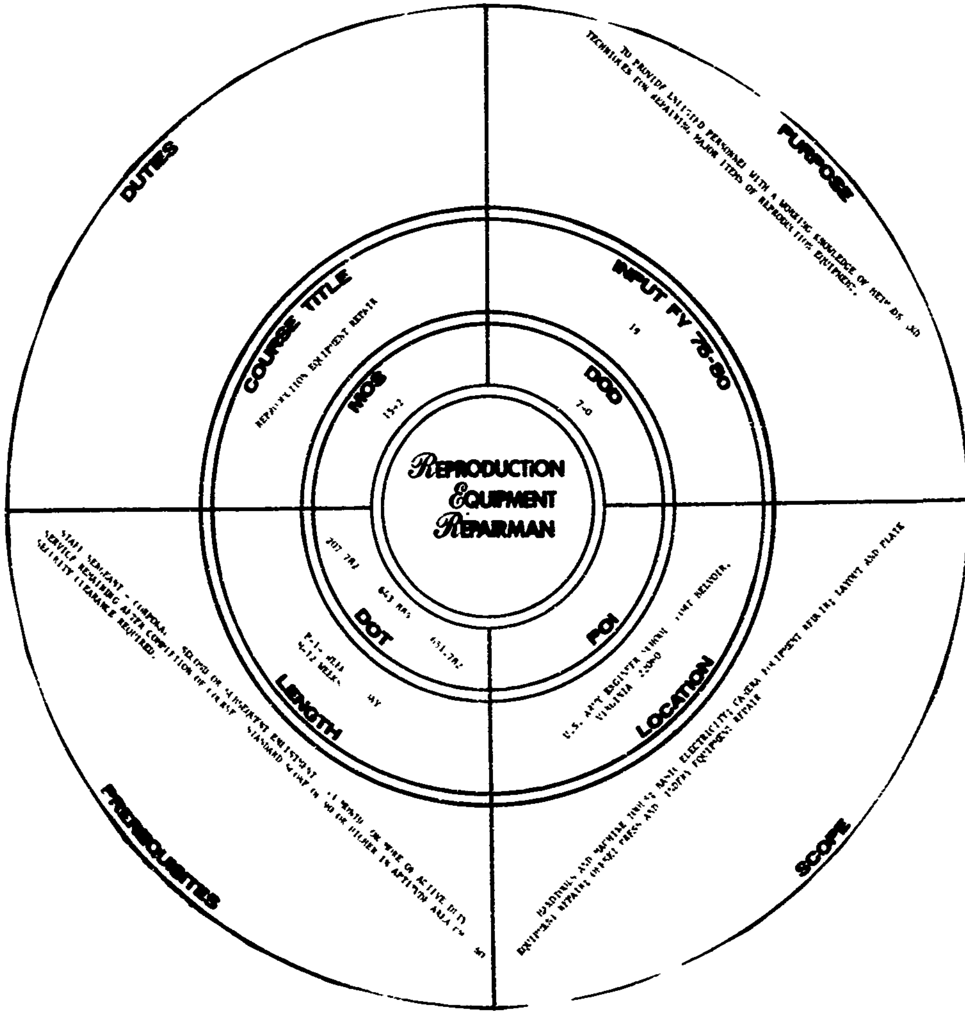
PERFORMS SCHEDULED MAINTENANCE, ASSISTED BY THE OPERATOR, AND MAKES REPAIRS TO LAUNDRY MACHINERY, WITH JUSTIFICATION AND DOCUMENTATION REQUIRED; DIAGNOSES MALFUNCTIONS BY VISUAL INSPECTION, OPERATIONAL TESTING, OR BY THE USE OF PRESCRIBED DIAGNOSTIC INSTRUMENTS, TOOLS AND EQUIPMENT; ADJUSTS, CLEANS, AND INSTALLS SEAL OR SAFETY DEVICES; MAINTAINS RECORDS AND REPORTS; SUBMITS LISTS OF REQUIRED SUPPLIES, PARTS AND EQUIPMENT BY USE OF TM 38-750 AND MARINE CORPS STOCK LISTS; USES MECHANICAL TOOL SETS IN RELATION TO TUNING ADJUSTMENTS, AS BELTS, PULLEYS, MOTORS AND PUMPS.
PURPOSE
INPUT FY 78-80
COURSE TITLE
ON THE JOB TRAINING
MOS
1173
DOD
8431
Hygiene Equipment Repairman
721 481
DOT
FOI
LENGTH
LOCATION
PREREQUISITES
SCOPE


REPRODUCTION EQUIPMENT REPAIRMAN
PURPOSE
DUTIES
PREREQUISITES
SCOPE
COURSE TITLE
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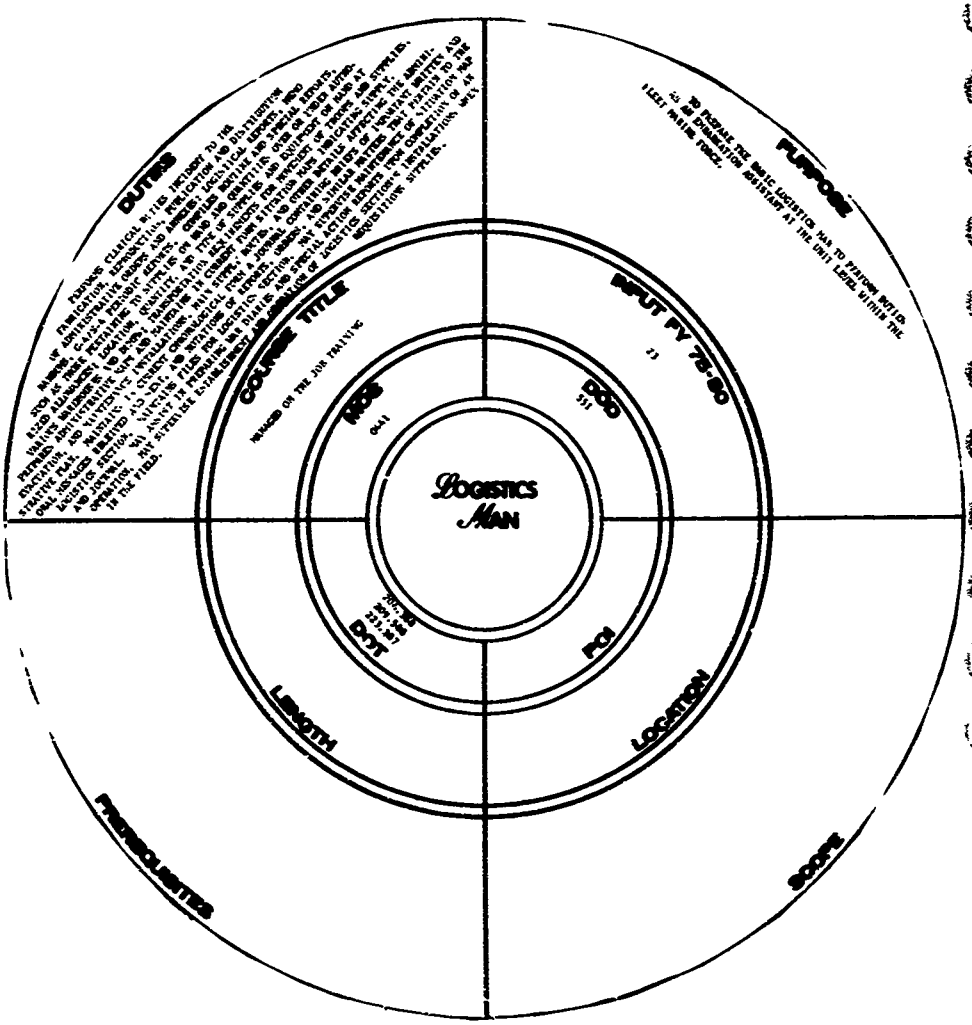
LENGTH
LOCATION
MOS
DOD
DOT
POI
REPRODUCTION EQUIPMENT REPAIR
U.S. ARMY ENGINEER SCHOOL
VIRGINIA
TECHNIQUES FOR REPAIRING MAJOR ITEMS OF REPRODUCTION EQUIPMENT.
SECURITY CLEARANCE REQUIRED.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COURSE TITLE
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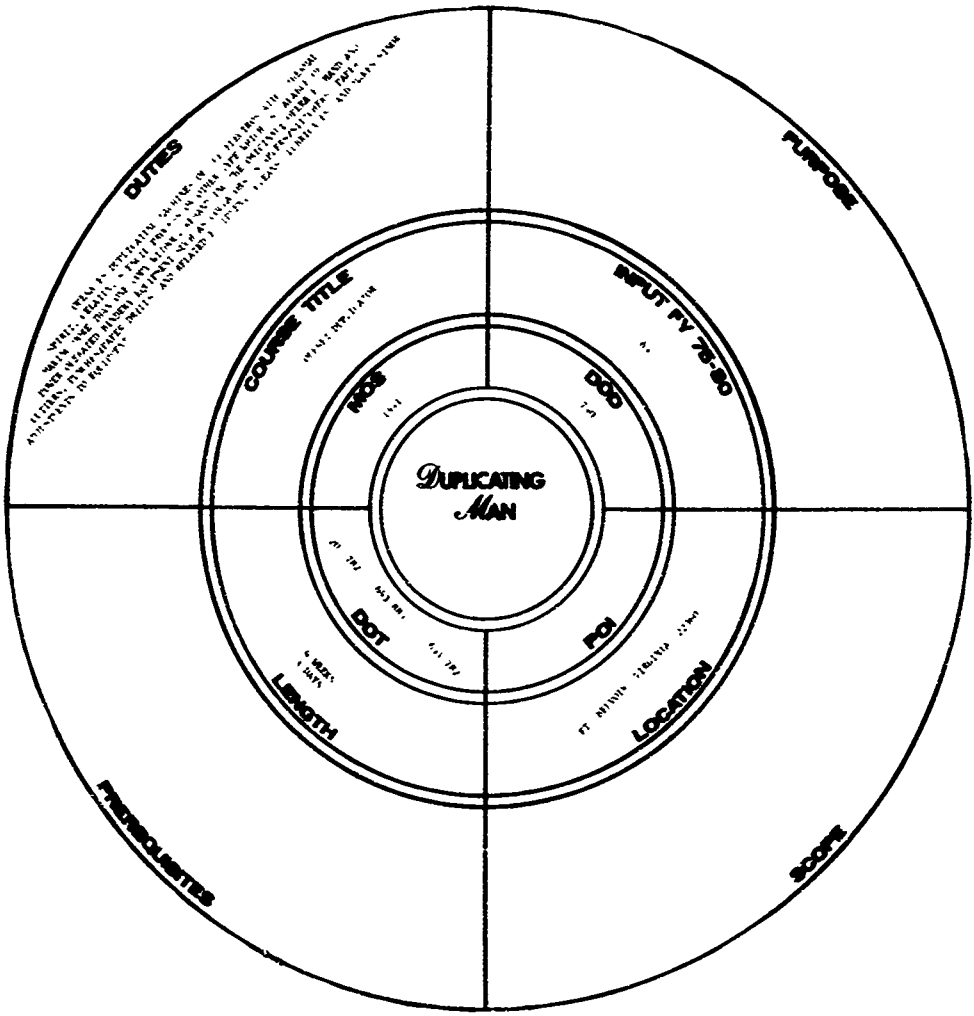
LENGTH
LOCATION
SCOPE
PREREQUISITES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COURSE TITLE
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DOD
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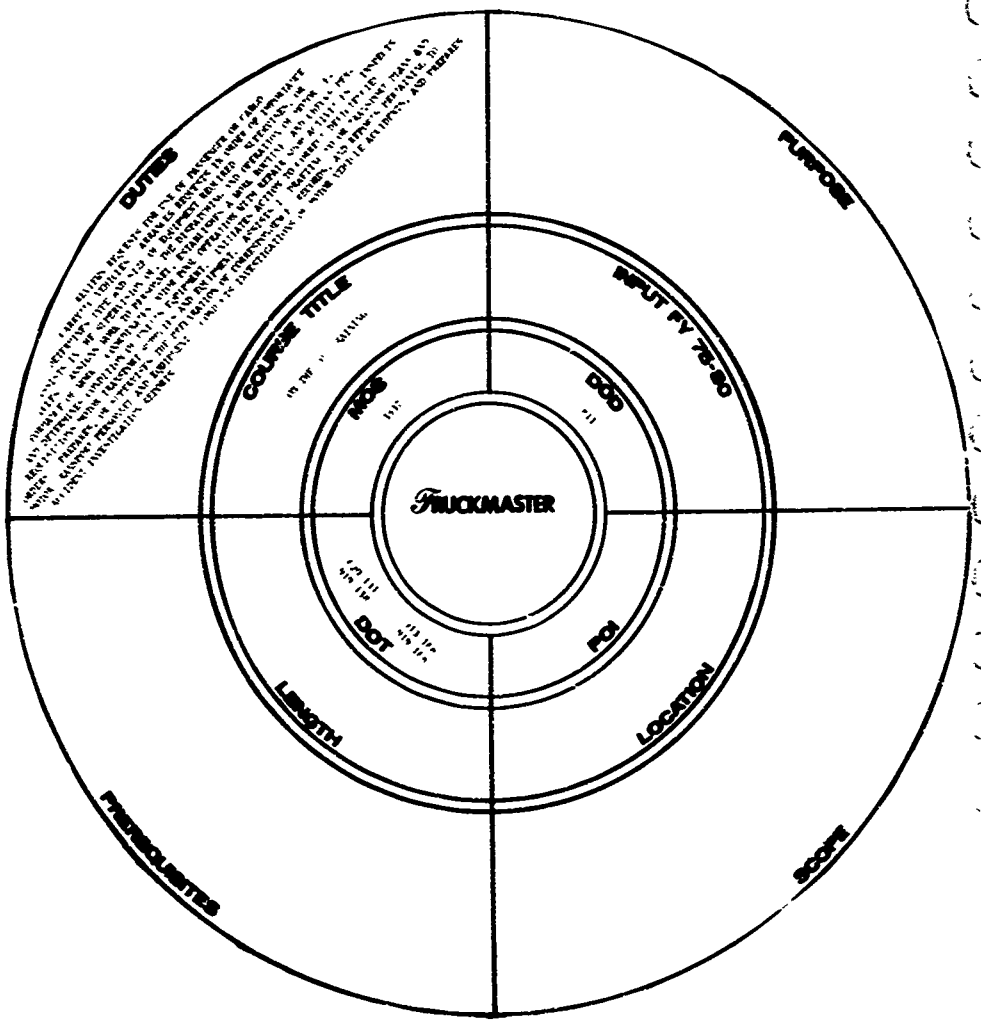
POI
DUPLICATING
MAN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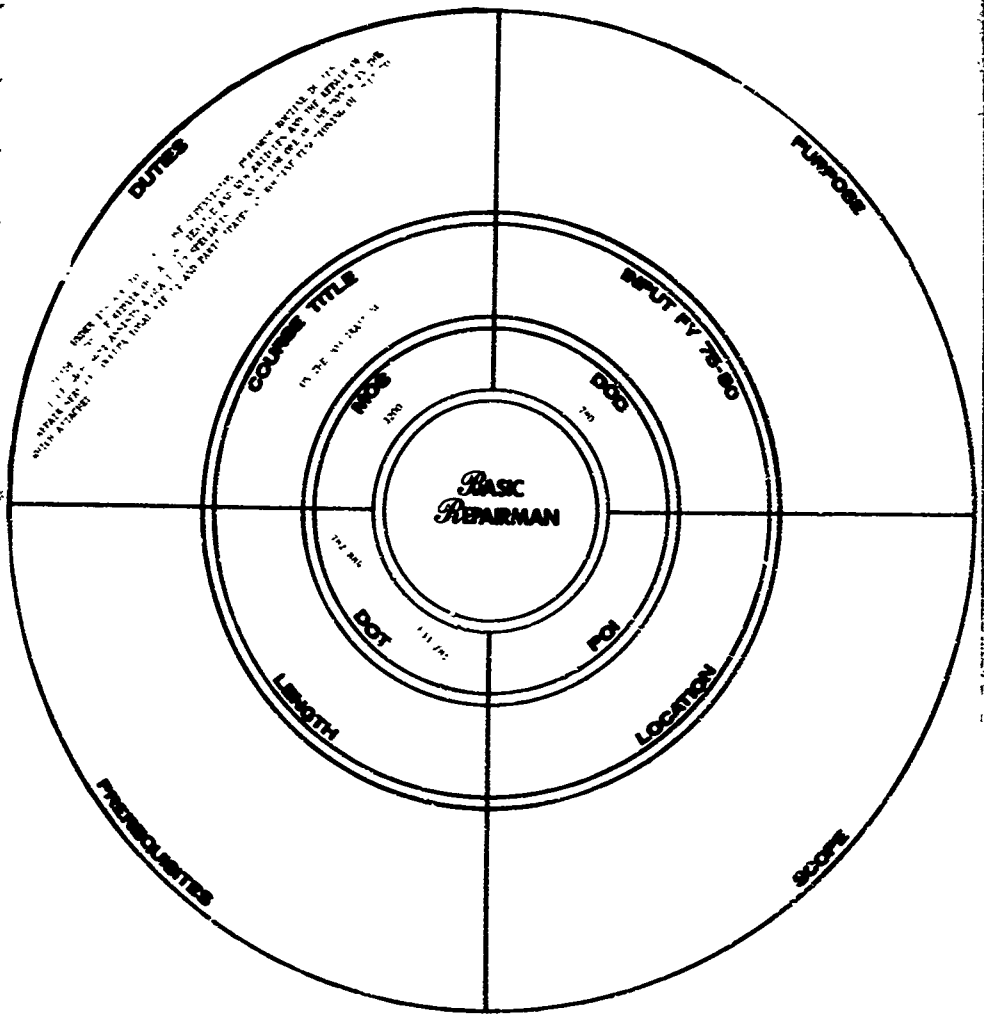
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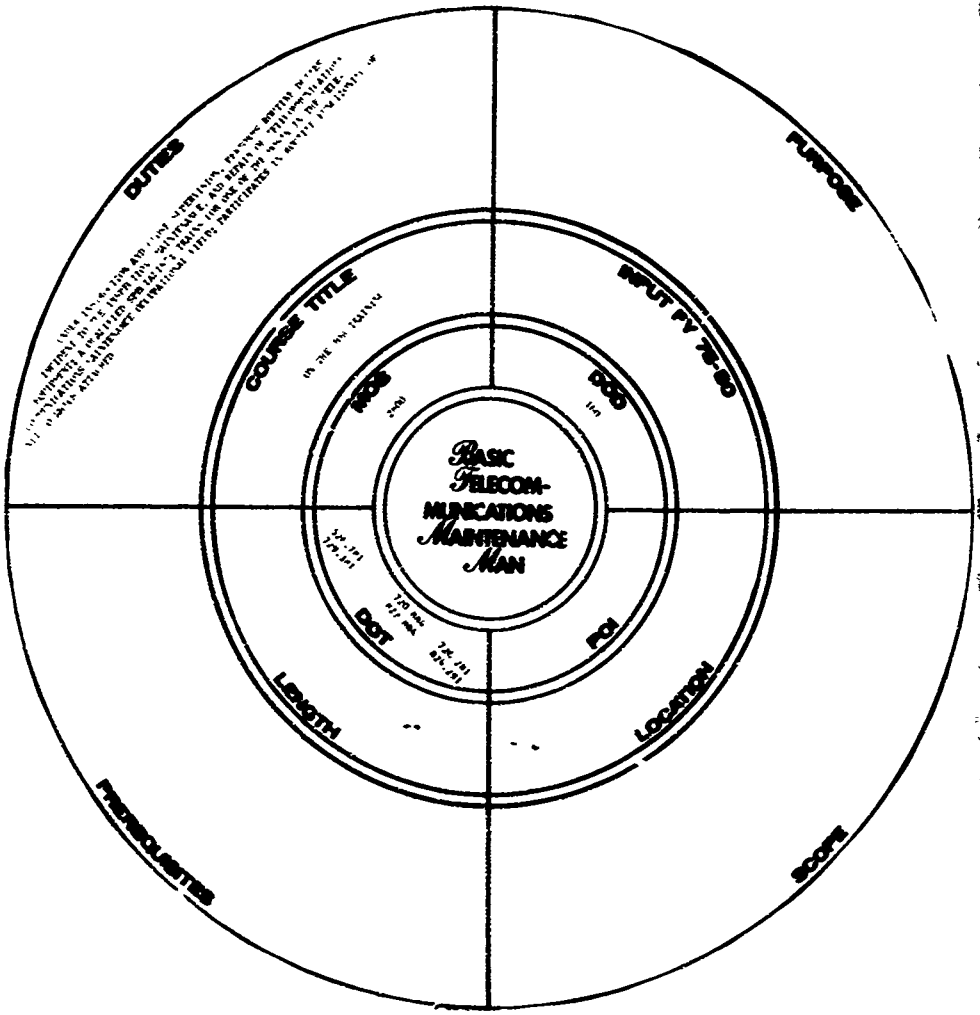
COURSE TITLE
MOS
DOD
DOT
POI
BASIC REPAIRMAN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POI
LOCATION
SCOPE
PREREQUISITES
LENGTH
DOT
COURSE TITLE
BASIC TELECOM-MUNICATIONS MAINTENANCE MAN

APPENDIX F

ANALYSIS OF CIVILIAN VOCATIONAL TRAINING (U.S. MARINE CORPS RESERVE)

TABLE F-1. ANALYSIS OF CIVILIAN VOCATIONAL TRAINING, U. S. MARINE CORPS RESERVE

TRAINING COURSE	MOS	INSTITUTION	NUMBER STUDENTS	COURSE HOURS	TOTAL COST	COST PER STUDENT	COST PER HOUR
1. Welding Shop	1316	Lawrence Regional Vocational High School	8	96	$ 1,252.00	$ 156.60	$ 1.63
2. Machine Shop	2161	Lawrence Regional Vocational High School	8	96	1,252.80	156.60	1.63
3. French	0250	Notre Dame College	1	144	158.33	158.33	1.10
4. French	8611	Notre Dame College	5	144	831.65	158.33	1.10
5. Radio	2800	Dolehanty Institute, School of TV & Electronics	30	272	13,674.90	455.83	1.68
6. Radio & TV Electronics	2800	Sylvania Technical School	30	300	27,000.00	900.00	3.00
7. Diesel Engines	2141	Liverpool Sr. High School	24	100	1,200.00	50.00	.50
8. Gas Engines	3516	Liverpool Sr. High School	8	100	400.00	50.00	.50
9. Basic Electronics	2841	Liverpool Sr. High School	3	20	36.00	12.00	.60
10. Auto Mechanics	3516 & 3537	Middlesex Co. Vocational Technical Adult Evening School	6	30	60.00	10.00	.33
11. Welding	3519	Middlesex Co. Vocational Technical Ad 't Evening School	3	72	75.00	25.00	.35
12. Diesel Engine Mechanic	3516	YMCA Automotive Technical School	2	62	590.00	295.00	4.76
13. Air Conditioning & Refrigeration	1161	Eastern Vocational Technical Adult Center	3	40	58.50	19.50	.49
14. Automotive	3516	Augusta Area Technical School	135	48	2,264.00	16.77	.35
15. Communications Technician	2800	ITT Technical Institute	6	96	1,680.00	280.00	2.92
16. Basic Electronics	2811, 2818 & 2841	Wichita Vocational/ Technical School	12	300	1,350 00	112.50	.38
17. TV Repair		Wichita Vocational/ Technical School	12	100	360.00	30.00	.30
18. Plumbing	1121	Chemeketa Community College	10		1,300.00	130.00	

TABLE F-1. ANALYSIS OF CIVILIAN VOCATIONAL TRAINING, U. S. MARINE CORPS RESERVE (continued)

	TRAINING COURSE	MOS	INSTITUTION	NUMBER STUDENTS	COURSE HOURS	TOTAL COST	COST PER STUDENT	COST PER HOUR
19.	Electrician	1141	Chemeketa Community College	10		$ 1,300.00	$ 130.00	$
20.	Automotive Engines	3516	Los Altos Community College	20	144	3,000.00	150.00	1.04
21.	Automotive Mechanics	3516	Aerco Trade Schools	15	144	4,500.00	300.00	2.08
22.	Minor Machine Shop Operation		J. M. Perry	1	105	88.00	88.00	.84
23.		1371	Portland Community College	10	72	1,200.00	120.00	1.67
24.		3516 & 1341	Portland Community College	10	72	1,200.00	120.00	1.67
25.	Merchandise Management/ Basic Bookkeeping & Business Machine Operation	4131 & 4111	Coosa Valley Vocational/ Technical School	20	60	600.00	25.00	.42
26.	Welding	6042	Welding Trade School	2	540	2,690.00	1,345.00	2.49
27.	Welding	6634	Welding Trade School	2	416	3,934.00	1,967.00	4.73
28.	Auto Mechanics & Advanced Auto Tuneup	3500 3516 & 3531	Aurora Technical Center	9	4	648.00	72.00	18.00
29.	Shop Safety, Tools Rigging, Concrete	1371	Eastern Montgomery County Area Vocational/Technical School	7	96	817.46	116.78	1.22
30.	Electrical Systems	1141	Eastern Montgomery County Area Vocational/Technical School	6	96	1,142.46	190.41	1.98
NOTE: Omit numbers 3, 4, 18, 19, 23, 24 & 28 from average figures.			Average:	363 15.8	3333 144.9	$67,925.92 $ 2,953.30	$6,781.99 $ 293.56	$34.22 $ 1.49

DEPARTMENT OF THE NAVY
HEADQUARTERS UNITED STATES MARINE CORPS
WASHINGTON, D. C. 20380

MCO 15_____

MT_____

DATE_____

MARINE CORPS ORDER 15____

From: Commandant of the Marine Corps
To: Distribution List

Subj: Individual training of enlisted Marines via Vocational/Technical Schools and similar commercial sources

Ref: (a) MCO 1510.2H
(b) MCO P1510.12G

Encl: (1) Course Budget Estimate Form
(2) VOTECS Training Request
(3) Unit VOTECS Completion Report

1. Purpose. To provide information, policy guidance and implementing instructions pertaining to the use of VOTECS (Vocational/Technical Schools) training from commercial sources to support individual training as defined in reference (a).

2. General Information.

a. Pilot programs within the Marine Corps have demonstrated the capability of utilizing selected public and private trade schools and community colleges to provide basic technical training in support of individual MOS (Military Occupational Specialties) qualification in military-civilian common skill areas. Typical VOTECS instruction includes but is not restricted to auto mechanics, basic electronics, welding, refrigeration, clerical skills and the building trades.

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b. Program Concept. The VOTECS program was designed to support individual training of enlisted Marines. It is directed toward assisting skill qualification training at the unit level leading to or providing an MOS qualified Marine. The expansion of capability within vocational/ technical institutions during the past decade has provided a heretofore unavailable training resource. It is the intent of this program to utilize this resource, when appropriate, to provide apprentice level training leading to MOS certification.

c. Program Structure. The VOTECS structure provides corporate level policy and budget management, mid-level implementation and functional management with unit level participating management as follows:

(1) Headquarters Marine Corps VOTECS management will be provided by the Director, Training and Education Division (MT) for regular component ground forces, the DC/S for Aviation (AA-1) for regular component air forces and the Director, Marine Corps Reserve Division (RES) for reserve component ground and air forces. Code MC-MT will act as program coordinator.

(2) Implementation and functional management shall be provided by commanders of major installations cited in paragraph 3c currently possessing comptroller, training and contracting capability within their commands. Some adjustment to staffs is anticipated in order to support the VOTECS requirement since a multimember team is inherent in the concept of an Area VOTECS Support Center (AVSC).

(3) The AVSC as an extended staff entity shall coordinate contractual and other support services acting as a control point and clearinghouse between units requesting VOTECS training and civilian

institutions or agencies providing such training. Other support services by definition include: developing inputs to the contractual process, assisting in selection of appropriate training site or institution, curriculum coordination, funding and contractual coordination, monitoring and evaluation of contracted training and such duties appropriate to conduct of a viable training course within VOTECS parameters.

(4) Units shall identify VOTECS training requirements and initiate requests for such training through command channels which upon approval shall be referred to the nearest appropriate AVSC for implementation. Units involved are required to work with the AVSC during the training process by:

(a) assisting in definition of training requirement

(b) assisting in monitoring student(s) and ongoing training

(c) assuring Marine student's welfare; i.e., housing, messing, transportation, pay, additional duties, etc.

d. The use of VOTECS training is appropriate as an adjunct to in-service school training when:

(1) Impending operational commitments preclude the use of service schools to provide a sufficient number of basic skill MOS trained personnel due to time frame involved.

(2) Required training is not available from service or inter-service schools.

(3) Extended travel and other expenses preclude the use of service schools.

(4) Unit commitments preclude the use of service schools.

(5) Inadequate facilities, nonavailability of qualified instructors or lack of other resources dictate the best interest of the Marine Corps would be served by use of the VOTECS program to provide new or additional technical qualification in the event of restructuring of a particular MOS qualification, change of unit mission or redesignation of a unit.

(6) Enlistment incentives program commitments can only be met through use of the VOTECS program.

(7) A general mobilization occurs.

(8) Peak loading at service schools cannot be met by existing resources.

(9) Low volume student input results in commercial training being more cost effective than service training.

(10) Training effectiveness can be significantly increased through the utilization of commercial sources.

e. Support Package. Implementation packages consisting of a general VOTECS training specification, basic lists of surveyed institutions capable of providing VOTECS skill training, procurement guidelines, training requirements, etc., shall be provided to Marine Corps AVSCs. The general specification supported by an approved POI (Program of Instruction) forms the basic skill training package, to be procured by base contracting officers. Direct communication between Command G3 sections responsible for training, AVSCs, contracting officers and formal schools having specialty technical cognizance is appropriate.

f. Cost. Although a cost limit has not been established, the total cost of a program must be justified by the quality of the curriculum.

Generally, the total amount of a VOTECS course, including the purchase of required supplies, should not exceed $5/instruction hour/student.

3. Authority.

a. Headquarters Marine Corps (MC-MT) is assigned as VOTECS program coordinator, in addition to manager, responsible for regular component ground forces. The latter duties include advisory, planning and funding responsibilities. Policy and other matters affecting Air and/or Reserve participation in the program shall be coordinated with Codes MC-AA-1 and MC-RES.

b. Headquarters Marine Corps Codes MC-AA-1 and MC-RES are assigned advisory and funding responsibility for Air and Reserve participation in the VOTECS program. As participating functionaries of the program, policy and other actions impacting the overall VOTECS program shall be coordinated with Code MC-MT.

c. The following Commands are hereby authorized to establish AVSCs to provide services in support of VOTECS training in accordance with command channels indicated by figure 1.

(1) Commanding General, Marine Corps Development and Education Command, Quantico, VA.

(2) Commanding General, Marine Corps Base, Camp Lejeune, NC.

(3) Commanding General, Marine Corps Base, Camp Pendleton, CA.

(4) Commanding General, Marine Corps Base, Twentynine Palms, CA.

(5) Commanding General, Marine Corps Recruit Depot, Parris Island, SC.

(6) Commanding General, Marine Corps Recruit Depot, San Diego, CA.

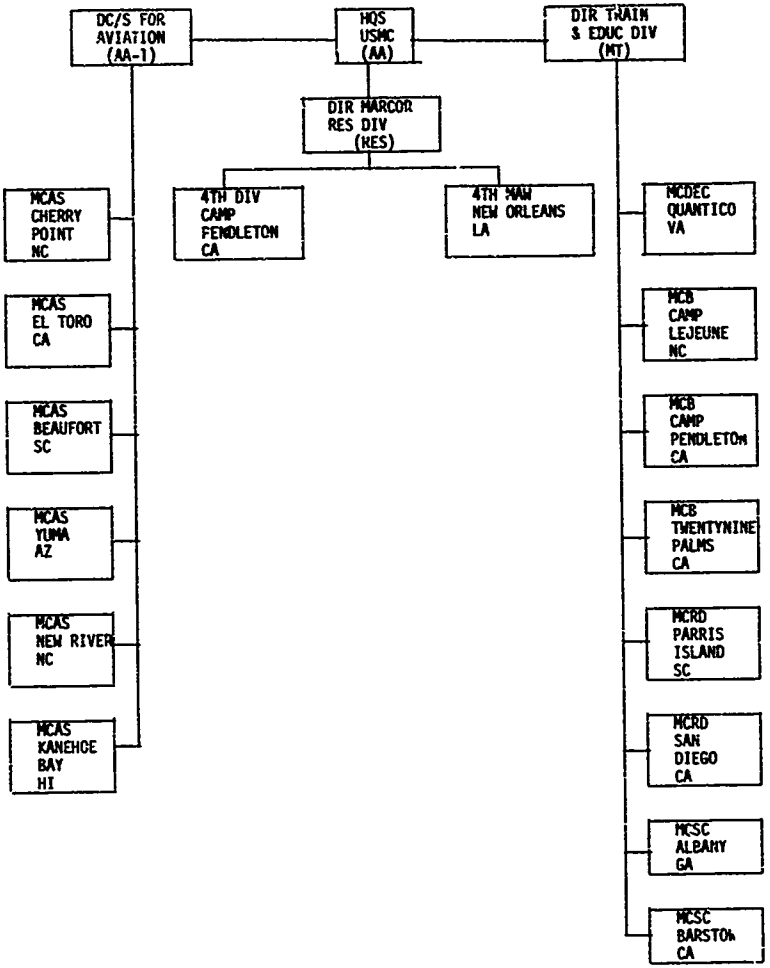

Figure 1. U. S. Marine Corps Area VOTECS Support Centers

(7) Commanding General, Marine Corps Supply Center, Albany, GA.

(8) Commanding General, Marine Corps Supply Center, Barstow, CA.

(9) Commanding General, Marine Corps Air Station, Cherry Point, NC.

(10) Commanding General, Marine Corps Air Station, El Toro, Santa Ana, CA.

(11) Commanding Officer, Marine Corps Air Station, Beaufort, SC.

(12) Commanding Officer, Marine Corps Air Station, Yuma, AZ.

(13) Commanding Officer, Marine Corps Air Station Helicopter, New River, Jacksonville, NC.

(14) Commanding Officer, Marine Corps Air Station, Kaneohe Bay, HI.

(15) Commanding General, 4th Marine Division, MCB Camp Pendleton, CA.

(16) Commanding General, 4th Marine Air Wing, Naval Air Station, New Orleans, LA.

d. Delegation of Authority. Commanding officers named above are authorized to delegate this authority to provide functional efficiency within command structure.

4. Selection of Student Personnel. The selection of personnel for VOTECS training must meet the following criteria:

a. Personnel must be able to use the training in carrying out the duties of the T/O billet or the MOS to which they will be assigned upon completion of VOTECS.

b. Personnel must have the following minimum periods of obligated service remaining after completion of VOTECS. Extensions of enlistment should be executed, if requi-

Length of Course	Obligated Service
Excess of 150 hours	2 years
Between 80 and 150 hours	1 year
Less than 80 hours	no requirement

c. Following identification of prospective students on the basis of their past performance, the prerequisites for Marine Corps formal schools stated in reference (b) should be used as a guide in determining additional individual qualifications necessary for successful completion of VOTECS training.

5. Selection of Schools. Prior to coordination with officials of a selected VOTECS School the AVSC must ascertain the following criteria:

a. Accreditation. VOTECS instruction must be conducted by a Federal or state approved institution or by nationally known civilian firms to warrant consideration. The following agencies can be contacted to assist in determining accreditation:

(1) Veterans Administration

(2) National Association of Trade and Technical Schools

(3) State Board of Education

(4) State Bureau of Schools Approval

(5) Department of Health, Education and Welfare

(6) Regional Accreditation Associations

b. Location. The optimum VOTECS training site would be on base. The VOTECS School should be within reasonable commuting distance from student home base to minimize the administration/support problems. The key to cost effectiveness of VOTECS training primarily results from using military housing and rationing to support such training.

6. Preparation for Training. Advance planning to initiate VOTECS training includes the following considerations:

a. Identification of required training

b. Selection of personnel to receive training

c. Survey of appropriate contractors (schools) to conduct training

d. Initial planning for troop housing, messing and transportation

e. Submission of training request for approval and funding

f. Coordination of contractor selection and award of training contract

g. Coordination of administrative support for training to include monitoring of training.

7. Curriculum. Not all Marines receive initial skill training prior to unit assignment. Figure 2 depicts the individual training model for enlisted Marines with VOTECS overlay assisting the MOS qualification effort.

a. The course of study selected should directly contribute to attaining or improving MOS qualification objectives.

b. Single student attendance is subject to the standard curriculum offered by schools. When group enrollments can be established, schools should be requested to provide courses specifically designed to meet the needs of the unit.

c. In the curriculum selection process the following courses should be avoided:

(1) Courses which consist primarily of theory when such theory is not an essential part of MOS qualification (i.e., pure mathematics).

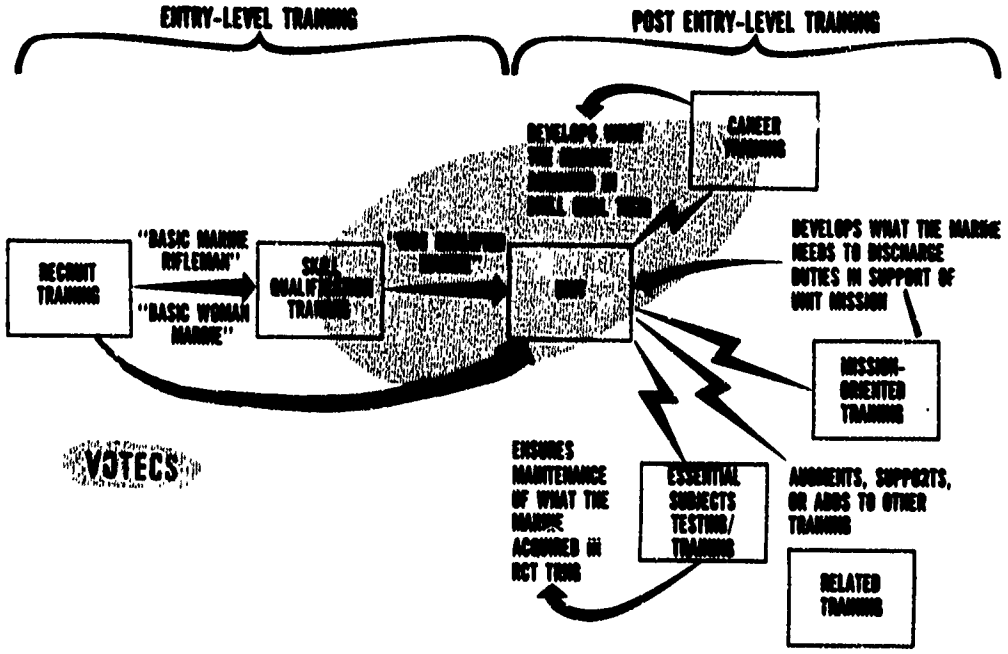

Figure 2. Individual Training of Enlisted Marines with VOTECS Overlay

(2) Courses which teach operation and maintenance of items of equipment not currently part of the Marine Corps inventory.

8. Uniform Requirements. VOTECS work environment and local climatic conditions should be considered in the designation of appropriate uniforms. The wearing of the seasonal Uniform of the Day is desirable. The uniform requirement is waived where the need for special clothing; i.e., safety clothing, can be demonstrated.

9. Administrative Requirements

a. Budgeting Requirements. Operational commands shall provide estimates of VOTECS training requirements for budget purposes to reach Headquarters Marine Corps, in a format similar to enclosure (1), annually by 31 March for current year, Budget Year and Budget Year+1 budget submissions.

b. Funding. Based upon command estimates of VOTECS training requirements, Headquarters Marine Corps shall annually provide necessary funding to base and station commanders with AVSCs to implement the required training. Direct contact with Headquarters Marine Corps designated representatives to resolve conflicts or other details related to funding of the VOTECS program is authorized.

c. Unit Requests for Training. Unit requests for approval of VOTECS training (see enclosure (2)) should be directed to the appropriate Marine Corps VOTECS Center listed in paragraph 3c above, via command approval channels. It is estimated that approximately three months lead time from unit date of request for training will be required to initiate actual training.

d. VOTECS Completion Report. Upon completion of training of personnel via the VOTECS program the unit requesting training shall

submit a Unit VOTECS Completion Report (enclosure (3)) in triplicate. Copies will be distributed as follows:

Copy #1. Command approving G-3 section

Copy #2. Area VOTECS Support Center

Copy #3. Headquarters Marine Corps designated sponsor code

e. Other Reports. Other reports are primarily operating reports as specified within the contractual package, and as such are primarily for use of the AVSC and contracting officer.

10. Contracting Procedures. All contracting for VOTECS training shall meet the requirements of ASPR (Armed Services Procurement Regulations). Base contracting officers and comptrollers as well as training department personnel must understand the program to effect efficient program administration. Under separate cover, samples of the general specification for VOTECS training, POIs and VOTECS contractual notes shall be provided each Marine Corps AVSC to assist in coordination of the contractual and administrative support package.

11. Applicability. This document is applicable to:

a. U.S. Marine Corps regular components

b. U.S. Marine Corps Reserves

c. Career federal employees in the support services field upon receipt of major command approval for training

d. Interservice personnel approved by Headquarters Marine Corps.

TAEG Report No. 22-1

COURSE BUDGET ESTIMATE FORM

VOTECS BUDGET ESTIMATE

MOS Requiring Training	Number of Students	Cost per* Student	Total Cost	Current Year	Budget Year	Budget Year+1

*Includes all directly associated costs; i.e., Instruction, Transportation, Messing, Supplies, etc.

Enclosure (1)

TAEG Report No. 22-1

Date of Request: _____

Date Training
Must be Completed: _____

VOTECS TRAINING REQUEST

1. Reporting Unit
2. Summary of training need
3. Name and location of VOTECS
4. Number of participating personnel
5. MOS for which trained
6. Starting/Completion date
7. Length of course and class schedule
8. Estimated cost per hour/student
9. Cost of required supplies (if applicable)
10. Total cost
11. Attach course curriculum as enclosure (1).

Enclosure (2)

UNIT VOTECS COMPLETION REPORT

1. Reporting Unit
2. Name/Location of VOTECS
3. Number of personnel participating by MOS
4. Did any personnel fail to complete a course? Explain.
5. Were any problems encountered in contract procedures? Explain.
6. Did the successful completion of the course qualify personnel for the MOS as defined in the MOS Manual? If not, explain.
7. Was "hands on training" with Marine Corps equipment provided during the course? If so, explain.
8. Does the school warrant consideration as a future, centralized MOS qualification center for other units?
9. Recommendations, if any, for improving the VOTECS training program. Cite problems encountered and proposed solutions.

Enclosure (3)